UTTARAKHAND STATE COUNCIL FOR SCIENCE & TECHNOLOGY
(GOVT. OF UTTARAKHAND)
DEHRADUN- 248007

PROFORMA FOR SUBMISSION OF R&D AND DEMONSTRATION PROJECTS IN THE IDENTIFIED AREAS
(*To be Submitted in 6 copies*) (Soft copy not acceptable)

PART I: GENERAL INFORMATION

1. **Project Title:** Empowering Uttarakhand's Youth: An Intelligent Interview Assistant Using AI and Natural Language Processing
2. **Name of the Institute/University/Organization:** School of Science and Technology, Swami Rama Himalayan University, Dehradun
3. **Status of the Institute:** Private University establishment under section 2(f) of UGC Act 1956 & enacted vide Uttarakhand Act of No. 12 of 2013.
4. **Name and designation of the Executive Authority of the Institute / University forwarding the application:** Dr. Pramod Kumar, Dean, School of Science and Technology, Swami Rama Himalayan University, Jolly Grant, Dehradun-248016, Uttarakhand.
5. **Category of the Project** (R&D; Demonstration; Other): R&D
6. **Specific Area:** STEM Education
7. **Duration:** 1 Years 6 Months
8. **Total Cost** (Rs.) ₹ 5,00,000
9. **Is the project Single Institutional or Multiple-Institutional:** Single Institutional
10. If the project is multi-institutional, please furnish the following: Not Applicable

Name of Project Coordinator:
Affiliation:
Address:

11. Project Summary:

This project proposes the development of **"EMPOWERING UTTARAKHAND'S YOUTH: AN INTELLIGENT INTERVIEW ASSISTANT USING AI AND NATURAL LANGUAGE PROCESSING"**, a smart, AI-powered virtual interview coach designed to enhance the employability skills of students from remote and rural regions of Uttarakhand. Leveraging advanced **Natural Language Processing (NLP)** and **speech recognition technologies**, the system will simulate realistic interview environments to help students practice communication skills, manage interview-related anxiety, and receive personalized, real-time feedback.
The platform will feature:

- **Interactive mock interviews** tailored to various domains and job roles.
- A **domain-specific question bank** regularly updated to reflect industry trends.
- **Multilingual support** in both Hindi and English to ensure inclusivity.
- A **performance analytics dashboard** for administrators and educators to monitor progress and provide targeted guidance.

By addressing the digital and linguistic divide, this initiative aims to bridge the employability gap and create equal opportunities for students in underserved regions of the state.

PART II: PARTICULARS OF INVESTIGATORS

12. **Name**:

Dr. Shiv Preet
Date of Birth: 13-july-1978 Sex: Male
Designation: Assistant Professor
Department: Computer Science and Engineering
Institute/University: Swami Rama Himalayan University
Address: School of Science and Technology, SRHU, Jolly Grant, Dehradun
PIN: 248016
Mobile/ Tel.: 9876491445 Telex: _____
Fax: _____ e-mail: shivpreet@srhu.edu.in
No. of Projects being handled at present: NIL.

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13. **Name**:

Dr. Gunjan Chhabra
Date of Birth: 03-07-1989 Sex: Male
Indicate whether Principal Investigator/Co-Investigator: Co-Investigator
Designation: Associate Professor
Department: Computer Science and Engineering
Institute/University: Swami Rama Himalayan University
Address: School of Science and Technology, SRHU, Jolly Grant, Dehradun
PIN: 248016
Mobile/ Tel.: 8433102140 _____ Telex : _____
Fax :_____e-mail : gunjanchhabra@srhu.edu.in
No. of Projects being handled at present: NIL.

PART III: TECHNICAL DETAILS OF PROJECT

14. Introduction

14.1 Origin of the proposal:

Uttarakhand, with its diverse topography and a significant portion of the population residing in remote and rural areas, faces unique challenges in providing equitable access to career guidance and employability resources. While urban students often benefit from physical coaching centres, soft skills training, and mentorship programs, students in remote hill districts are often left behind due to limited exposure, infrastructure constraints, and linguistic barriers.

With the rapid digital transformation across education and recruitment sectors, **Artificial Intelligence (AI)** and **Natural Language Processing (NLP)** have emerged as powerful tools to democratize access to personalized learning and career development. Recognizing this potential, the idea for **"EMPOWERING UTTARAKHAND'S YOUTH: AN INTELLIGENT INTERVIEW ASSISTANT USING AI AND NATURAL LANGUAGE PROCESSING"** was conceived—an AI-powered virtual interview assistant designed to simulate realistic interview scenarios and provide real-time feedback, even in low-connectivity or resource-limited settings.

This proposal emerges from the observed gap between academic education and job-readiness skills, especially in **communication, confidence building, and interview preparedness** among students in the **rural and semi-urban belts of Uttarakhand**. The project aligns with national and state priorities on digital empowerment, youth skilling, and inclusive growth, and seeks to harness emerging technologies to bridge the urban-rural divide in employability training.

14.2 Definition of the problem:

In Uttarakhand, a significant proportion of youth—especially those from rural, remote, and hilly regions—face barriers in accessing quality career guidance, soft skills training, and interview preparation resources. Despite possessing academic qualifications, many students struggle to transition into employment due to inadequate exposure to real-world interview environments, poor communication skills (especially in English), and limited self-confidence during the hiring process.

The traditional model of interview training through in-person coaching or workshops is **geographically inaccessible**, **resource-intensive**, and often not tailored to individual needs. Moreover, language and socio-economic disparities further widen the skill gap, leaving students underprepared for job interviews in both government and private sectors.

Another critical challenge is the **lack of real-time, personalized feedback mechanisms** and the **absence of scalable tools** that can support thousands of students simultaneously. Educators and institutions also lack effective systems to **monitor student progress** in soft skills development and to **identify areas for improvement**.

There is a clear need for an innovative, technology-driven solution that:

- Simulates interview environments in a cost-effective and scalable manner.
- Provides **multilingual support** (Hindi and English)
- Delivers **real-time feedback** based on AI-driven speech and text analysis.
- Empowers administrators with actionable insights through analytics.

This proposal seeks to address these problems by developing an **intelligent AI-powered interview assistant**, bridging the employability gap and equipping Uttarakhand's youth with essential skills to confidently face real-world job interviews.

14.3 **Objectives**

The primary objective of this project is to design and develop an AI-powered virtual interview assistant—**EMPOWERING UTTARAKHAND'S YOUTH: AN INTELLIGENT INTERVIEW ASSISTANT USING AI AND NATURAL LANGUAGE PROCESSING**—that enhances interview preparedness and communication skills of students from remote and rural regions of Uttarakhand using advanced Natural Language Processing (NLP) and speech technologies.

Specific Objectives:

1. **To develop a virtual interview simulation platform** that mimics real-world interview scenarios across various domains and difficulty levels, enabling students to practice and improve their interpersonal communication skills.
2. **To integrate Natural Language Processing (NLP) and speech recognition modules** capable of analysing spoken and written responses for assessing clarity, grammar, pronunciation, tone, and content relevance.
3. **To provide real-time, personalized feedback** to students on their interview performance, including confidence level, speech quality, language usage, and overall delivery.
4. **To build a domain-specific and updatable question bank** for various job sectors (e.g., IT, education, government, etc.) that supports multiple levels of interview difficulty and aligns with current industry standards.
5. **To ensure multilingual accessibility** by enabling the system to support both **Hindi and English**, thus catering to students with varied linguistic backgrounds.
6. **To develop an administrative dashboard** for educators, career counsellors, and institutional authorities to track student progress, identify skill gaps, and offer targeted support.
7. **To promote scalability and inclusivity** by designing a lightweight, cloud-based system that can function in low-and width environments and reach students even in remote areas.

15. **Review of Current Status of research and development in the subject**

15.1 **International Status**: Globally, AI and Natural Language Processing (NLP) have witnessed significant advancements in education, career services, and human-computer interaction. Virtual interview platforms such as **HireVue, Recright, and InterviewAI** utilize AI-driven video and speech analytics to assess candidate behavior, communication skills, and suitability for job roles. These platforms are commonly used by multinational corporations for initial screening and remote hiring processes.
Advanced systems integrate **speech-to-text conversion, sentiment analysis, emotion detection, and personality prediction**, offering recruiters and candidates deeper insights. Research institutions and companies across the US, UK, Europe, and China are also investing in AI-powered soft skills training tools that enable scalable, individualized learning for job seekers and students.

Despite these innovations, most commercial platforms are **not tailored for under-resourced or multilingual communities**, leaving a significant gap in inclusive and localized solutions—especially in developing regions.

15.2 **National Status:** In India, the adoption of AI in education and employability is rapidly growing. Initiatives such as **AICTE's Skill Enhancement Platforms**, **NASSCOM FutureSkills**, and startups like **Mock AI, iPrep, InterviewBuddy**, and **Hello English** have started integrating AI and NLP to improve employability and interview preparation.
However, these tools are predominantly:

- **English-centric**
- **Subscription-based**
- Or designed for **urban, tech-savvy users.**

Government-backed schemes like **Skill India** and **Digital India** aim to bridge the digital divide, but there is **limited presence of intelligent systems that cater specifically to soft skills training for rural or semi-urban populations**. The lack of **Hindi-language support, local contextualization, and adaptive feedback mechanisms** further limits their usability for Uttarakhand's remote learners.

15.3 **Importance of the proposed project in the context of status:** This project fills a **critical research and application gap** at the intersection of **AI/NLP technology and grassroots-level employability training**. Unlike existing tools, this system will:

- Be **multilingual** (Hindi + English)
- Provide **real-time, localized feedback.**
- Be tailored for **low-resource environments** (low bandwidth, mobile access)
- Support **educators and institutions** with analytics-based tracking

By leveraging cutting-edge AI while aligning with the socio-linguistic needs of Uttarakhand's youth, the project stands out as a **contextually relevant innovation** and can serve as a **scalable model** for other hilly or rural states in India.

15.4 **Anticipated Products & Processes of Practical/Technological utility /Socio economic relevance expected to be evolved by pursuing the project:**

Anticipated Products:

- A **cloud-based virtual interview assistant** powered by AI and NLP
- A **bilingual (Hindi & English)** user interface with audio/text-based interaction
- A **customizable domain-specific question bank**
- An **administrative dashboard** for real-time progress monitoring and reporting
- AI-based feedback engine assessing fluency, tone, clarity, and content relevance.

Practical & Technological Utility:

- Enhances interview readiness through repeated practice.
- Accessible via smartphones and low-cost devices
- Reduces dependence on in-person coaching.
- Can be integrated with colleges, skill centres, and government job portals.

Socio-Economic Relevance:

- Increases employability among underserved youth.
- Promotes confidence and communication skills.
- Reduces rural-to-urban migration pressure for coaching or job preparation.
- Contributes to SDGs on Quality Education, Decent Work, and Reduced Inequality

15.5 **Expertise available with the proposed investigating group / institution in the subject of the project:**

The investigating team comprises **experts in Artificial Intelligence, Natural Language Processing, Educational Technology, and Human-Computer Interaction**, with prior experience in:

- Designing AI-based educational tools
- Building multilingual NLP systems
- Conducting research on youth skill development in rural contexts
- Executing funded projects with measurable social impact

The institution is equipped with:

- A dedicated **AI/ML lab**
- Software development and testing facilities
- Collaborations with industry and academia for field validation

The group has also contributed to **publications, tools, and community outreach initiatives** focused on digital empowerment, particularly in hill regions.

15.6 **How this proposal is beneficial to the State:** Uttarakhand's unique geography creates barriers to access in higher education and employment preparation. This project addresses those challenges directly by:

- **Equipping youth in remote areas with industry-relevant skills**
- **Reducing the digital and linguistic divide**
- **Supporting the state's mission of digital empowerment and skilling**
- Creating a **scalable digital solution** that can be adopted by:
    - Schools and colleges in hill districts
    - Government training centers
    - NGOs and youth outreach programs

The project also has potential for **long-term sustainability and expansion** across the Himalayan belt and other underserved regions, contributing to Uttarakhand's vision of **inclusive growth and smart development**.

16. Work Plan

16.1 **Methodology**:

The project will follow a systematic, multi-phase approach that integrates research, development, testing, and deployment to ensure practical utility and scalability:

a. Requirement Analysis and User Research

- Conduct surveys and interviews with target users (students, educators, career counsellors) across various districts in Uttarakhand.
- Identify linguistic, technological, and psychological barriers in current interview preparation methods.
- Define functional and non-functional requirements for the intelligent interview assistant.

b. Design and Architecture Development

- Develop the system architecture with modular components:
    - NLP Engine (text and speech analysis)

- Domain-specific Question Bank
- Interview Simulation Interface (UI/UX)
- Feedback Generation Module
- Analytics Dashboard

c. NLP and Speech Technology Integration

- Integrate open-source NLP libraries (e.g., spaCy, BERT, or IndicNLP) and speech-to-text APIs (e.g., Google Speech or Mozilla DeepSpeech).
- Customize and fine-tune models for **Hindi and English**.
- Develop scoring logic for evaluating grammar, fluency, coherence, pronunciation, and confidence.

d. System Development and Prototyping

- Create a web-based and mobile-responsive platform using scalable frameworks (React/Python/Django).
- Implement role-based access (Student, Administrator).
- Ensure functionality even under **low-bandwidth conditions**.

e. Testing and Validation

- Conduct pilot testing with selected institutions in rural and semi-urban areas.
- Collect performance data and user feedback.
- Iterate design and improve performance of the AI models and feedback mechanisms.

f. Deployment and Documentation

- Final deployment of the system on a cloud platform.
- Prepare user manuals, training content, and help guides.
- Ensure accessibility compliance and data privacy features.

16.2 **Proprietary/patented items, if any, expected to be used for this project.**: NA

16.3 **Organization of work elements**

Phase	**Activities**	**Timeframe**	**Deliverables**
Phase 1	Problem analysis, requirement gathering, team formation	Months 1–2	Requirement specification, user research report
Phase 2	System design, architecture planning	Months 3–4	Design documents, technology stack finalized
Phase 3	NLP & AI module development, speech integration	Months 5–7	Prototype of interview assistant, initial NLP engine
Phase 4	UI/UX development, dashboard creation, database integration	Months 8–10	Beta version of platform
Phase 5	Pilot testing, performance evaluation, improvements	Months 11–12	Test results, refined version of system
Phase 6	Final deployment, training workshops, documentation	Months 13–15	Final system, user manuals, training materials
Phase 7	Dissemination of results, reporting, policy brief creation	Months 16–18	Project report, stakeholder presentations, policy briefs

16.4 **Suggested plan of action for utilization of research outcome expected from the project.**

a. Academic and Institutional Integration

- Partner with colleges, ITIs, and government skill centers across Uttarakhand for long-term adoption.
- Conduct workshops to train faculty and placement officers in using the platform.

b. Government Collaboration

- Share findings and technology with **Skill Development Department** and **Higher Education Department** of Uttarakhand.
- Offer the system as a model for **digital skilling initiatives** under **Digital India** or **Skill India**.

c. Technology Transfer & Scaling

- Open source select components (e.g., Hindi NLP toolkit) to benefit broader academic and rural tech communities.
- Enable APIs and plug-ins for integration with other career platforms and job portals.

d. Societal Impact and Outreach

- Organize webinars and awareness campaigns to promote the use of the tool among students from remote regions.
- Publish research findings in journals and conferences to promote knowledge exchange.

e. Entrepreneurship and Incubation

- Explore the development of a start-up or spin-off that customizes and commercializes the platform for educational institutions across India.
- Incubate under institutional or state-supported innovation hubs.

16.5 **Time schedule of activities giving milestones.**

S.N.	Name of Milestone	Expected Start (Month/Year)	Expected Completion (Month/Year)	Remarks
1	**Requirements & Dataset**	August 2025	September 2025	User surveys, interviews, linguistic & job domain data collection
2	**NLP & Speech Model Integration**	October 2025	December 2025	Hindi-English NLP tuning, speech recognition & feedback engine
3	**UI/UX + Interview Engine**	January 2026	March 2026	Web/mobile interface, question bank integration, simulation logic
4	**Admin Dashboard**	April 2026	June 2026	Role-based access, student performance analytics
5	**Pilot Testing & Feedback**	July 2026	August 2026	Deployment in rural colleges/ITIs, evaluation, improvements
6	**Research Paper Submission**	September 2026	January 2027	Based on project outcomes, results, and analytics

16.6 **Project implementing Agency/Agencies**

Name of Agency	Address of Agency	Proposed Research Aspects	Proposed Amount	Cost Sharing %
Swami	Jolly Grant,	AI model development, NLP	₹5,00,000	100%

Rama Himalayan University	Dehradun, 248016	module, system design, UI/UX development, testing, deployment

PART IV : BUDGET PARTICULARS

17. **Budget** (In Rupees)

A. Non-Recurring (e.g. equipments, accessories, etc.)

S.N.	Item Description	Year 1 (₹)	Total (₹)
1	High-performance Desktops/Laptops (2 units @ ₹85,000 each)	1,70,000	1,70,000
2	USB Microphones & Headsets (for speech testing)	20,000	20,000
3	External Storage (HDD/SSD)	15,000	15,000
4	Software Licenses / APIs (NLP, Speech-to-Text)	25,000	25,000
5	Tablet / Mobile Testing Device (mid-range)	30,000	30,000
	Total (A. Non-Recurring)	—	₹2,60,000

B. Recurring

B.1 Manpower

S.N.	*Item*	*Quantity*	*Year 1 (₹)*	*Year 2 (₹)*	*Total (₹)*
1	*Project Assistant (Part-time)*	*1*	*50,000*	*50,000*	*1,00,000*
2	*Intern/Field Enumerator (Data Collection & Pilot)*	*1*	*35,000*	*35,000*	*70,000*
	Total (B.1 Manpower)		*85,000*	*85,000*	*₹1,70,000*

B.2 Consumables

S.N.	Item	Year 1 (₹)	Year 2 (₹)	Total (₹)
1	Printing & Stationery	10,000	10,000	20,000
2	Miscellaneous Consumables	5,000	5,000	10,000
	Total (B.2 Consumables)	**15,000**	**15,000**	**₹30,000**

B.3 Contingency/Travel/Dissemination

S.N.	Item	Year 1 (₹)	Year 2 (₹)	Total (₹)
1	Local Travel for Pilot Testing & Training	10,000	10,000	20,000
2	Report Writing, Research Paper, Outreach	5,000	5,000	10,000
3	Contingency Reserve (2% of total)	—	—	10,000
	Total (C. Travel & Misc.)	—	—	**₹40,000**

Sub-Total (B=B.1+B.2 + B.3 + B.4 + B.5)
Grand Total (A + B) = 5,00,000

The requested amount of ₹5.00 Lakhs will support the full-cycle implementation of the proposed project, from system design and development to field testing and research dissemination. Two high-end computing systems and testing devices will support parallel NLP and AI development. Part-time manpower will handle system building, data curation, and field implementation. The project is designed to be cost-effective while ensuring significant impact on employability training in remote areas of Uttarakhand.

Note:
Please give justification for each head and sub-head separately mentioned in the above table.

Financial Year: April - March
In case of multi-institutional project, the budget estimate to be given separately for each institution.

17.1- Justification:

A. Non-Recurring (e.g., equipments, accessories, etc.):

This component includes essential hardware and software resources required for developing and testing the intelligent interview assistant platform:

- **Two High-Performance Laptops/Desktops (₹1,70,000):** Required for AI/NLP model development, speech processing, and platform deployment. Dual systems ensure parallel work and team collaboration.
- **USB Microphones & Headsets (₹20,000):** For accurate speech input and testing the real-time feedback mechanism in various environments.
- **External Storage Devices (₹15,000):** To securely store training datasets, audio responses, and system backups.
- **Software Licenses / APIs (₹25,000):** Includes NLP toolkits, speech-to-text APIs, and language model access necessary for prototype development.
- **Tablet/Mobile Testing Device (₹30,000):** For simulating end-user experiences and conducting pilot tests in mobile-first environments typical of rural Uttarakhand.

These are one-time expenses and are vital for building and testing the system effectively.

B. Recurring:

B.1 Manpower: ₹1,70,000

Project Assistant (Part-time – ₹1,00,000): Will assist in backend development, NLP module integration, and user interface refinement.

Field Enumerator/Intern (₹70,000): Will support user surveys, data collection, testing in rural institutions, and reporting. Hiring local youth for this role also supports the skilling objective.

This manpower will drive the execution and validation phases while keeping the team size cost-efficient and focused.

B.2 Consumables ₹30,000

Includes printing of training material, stationery, and miscellaneous lab consumables.

These are necessary for pilot testing, feedback collection, local training sessions, and documentation.

B.3 Travel: ₹30,000

Covers research paper writing and local travel within Uttarakhand for project-related activities such as institutional visits, pilot testing, student training, and field implementation. Travel is limited to nearby regions to keep costs minimal while ensuring essential outreach.

B.4 Contingency: ₹10,000 (2%)

To cover any unforeseen or emergency expenses related to cloud hosting, repair/replacement of accessories, data backups, or additional licenses.

B.5 Overhead Charges (if applicable): The host institute has agreed to waive overheads or absorb them internally as in-kind support for the successful execution of the project.

18.1- Designation of official empowered Finance Officer to receive financial grants : _____

Account Details:

Bank name & address: SRHU- Scientific & Industrial Research
Bank Account No: 37200223663
IFSC code: SBIN0010580
PAN No: AAAJH0463L
GST No.: 05AAAJH0463L1ZC

18.2- (i)- Does this project require approval from Institutional Ethics Committee : **Yes/No**: NO
(ii)- If **Yes** then provide the Institutional Ethics Committee Certificate from competent authority

PART V : EXISTING FACILITIES

19. **Available equipment and accessories to be utilized for the project :**

S.No	Name of equipment/ accessories	Make	Model	Funding Agency	Year of Procurement
	NA				

PART VI: DECLARATION/CERTIFICATION

It is certified that

(a) the research work proposed in the scheme/project does not in any way duplicate the work already done or being carried out elsewhere on the subject.

(b) the same project has not been submitted to any other agency/agencies for financial support.

(c) the emoluments for the manpower proposed are those admissible to persons of corresponding status employed in the institute/university.

(d) necessary provision for the scheme/project will be made in the Institute/University/State budget in anticipation of the sanction of the scheme/project.

(e) if the project involves the utilization of genetically engineered organism, it is agreed that we will ensure that an application will be submitted through our Institutional Biosafety Committee and we will declare that while conducting experiments, the Biosafety Guidelines would be followed.

(f) if the project involves field trials/experiments/exchange of specimens, etc. we will ensure that ethical clearances would be taken from concerned ethical Committees/Competent authorities.

(g) it is agreed that any research outcome or intellectual property right(s) on the invention(s) arising out of the project shall be taken in accordance with the instructions of the Council.

(h) the institute/university agrees that the equipment, other basic facilities and such other administrative facilities as per terms and conditions of the grant will be extended to investigator(s) throughout the duration of the project.

(i) the Institute assumes to undertake the financial and other management responsibilities of the project.

Sign. with Seal of Executive Authority of Institute/University
Date:

Signature of Principal Investigator:
Date:

Signature of Co-Investigator
Date:

PART VII : PROFORMA FOR BIODATA OF PROJECT COORDINATOR/PRINCIPAL INVESTIGATOR/COINVESTIGATORS

Name: Dr. Shiv Preet

Designation: Assistant Professor

Department/Institute/University: Department of Computer Science and Engineering, School of Science and Technology, Swami Rama Himalayan University, Dehradun

Date of Birth: 13/07/1978 **Sex (M/F): M**

Category: General

Education *(Post-Graduation onwards & Professional Career)*

S.N.	Institution Place	Degree Awarded	Year	Award / Prize / Certificate
1	Lovely Professional University, Punjab	M. Tech (CSE)	2014	1st
2	Lovely Professional University, Punjab	Ph.D.	2024	Awarded

Publications (*Numbers only*) .....

Books : Research Papers: 9

Reports : General articles :

Patents :

Others (*Please specify*)

1. Ashish Kr. Luhach, Ravindra, Shiv Preet, "**An overview of the Internet of Things and its Research Issues**", In International Journal of Computer Technology and Applications", IJCTA , 2016.
2. Shiv Preet, Ashish Kr. Luhach "**Comparison of Various Routing and Compression Algorithms: A Comparative Study of Various Algorithms in Wireless Networking**", Springer, 2016.
3. Shiv Preet, Dr. Amandeep Bagga," **Lempel–Ziv–Oberhumer: A critical evaluation of lossless algorithm and its applications**", ICCS, 2018.
4. Shiv Preet, Dr. Amandeep Bagga "**Squeeze Pack, and Transfer Algorithm: A new over the top compression application for Seamless data transfer over the wireless network**", IJITEE, 2019.
5. Shiv Preet, Dr. Amandeep Bagga "**Satellite Internet Communication: A Race with Contemporary Optical Fiber Network with the Help of SPT Algorithm**", ICTSGS, ECS Transactions, 2022.

6. Shiv Preet, Dr. Amandeep Bagga "**Predefined SPT (Squeeze, Pack and Transfer) Key File Update: A MapReduce Way of Automatic Key Updates for SPT Algorithm**", ICICCT, 2021.
7. Shiv Preet, Dr. Chirag Sharma, "**Applications of SPT (Squeeze Pack and Transfer) and other lossless compression algorithms in IoT: A comparative study**", ICCS, 2022.
8. Shiv Preet, Dr. Chirag Sharma, "**The SPT and other compression algorithms and their effect on data transfer over mobile and ad hoc wireless networks**", ICCS, 2023.
9. Shiv Preet, Dr. Chirag Sharma, "**A Squeeze Pack and Transfer Algorithm-based Efficient Framework for Optimized Network Data Transfer in IoT Applications**", IJISAE, 2023

Name: Dr. Gunjan Chhabra

Designation: Associate Professor

Department/Institute/University: Department of Computer Science and Engineering, School of Science and Technology, Swami Rama Himalayan University, Dehradun

Date of Birth: 03/07/1989 Sex (M/F): M

Category: General

Education *(Post-Graduation onwards & Professional Career)*

S.N.	Institution Place	Degree Awarded	Year	Award / Prize / Certificate
1	UPES, Dehradun	M. Tech (CSE)	2014	1st
2	UPES, Dehradun	Ph.D.	2021	Awarded

Publications (*Numbers only*) .....

Books : 7 Research Papers: 112

Reports : General articles :

Patents : 10 Others (*Please specify*) :

List of important publications

10. Gunjan Chhabra, Dr. Ajay Prasad, Dr. Venkatadari, **"IMPLEMENTATION OF AURA COLORSPACE VISUALIZER TO DETECT HUMAN BIOFIELD USING IMAGE PROCESSING TECHNIQUE",** Journal of Engineering Science and Technology, volume 14, issue 2 (Scopus, E-SCI) (April, 2019)
11. Gunjan Chhabra, Dr. Ajay Prasad, Dr. Venkatadari, "**Future Trends of Artificial Intelligence in Human Biofield**", International Journal of Innovative Technology and Exploring Engineering, volume 8, issue 10 (SCOPUS) (Aug, 2019).
12. Parul Madan, Satya Prakash Upadhyay, Paravjot Singh, Rashmi Sharma and Gunjan Chhabra, "**Track Your Parking Lot with the help of Sensors**", International Journal of Innovative Technology and Exploring Engineering, Volume-8, issue-11 (SCOPUS) (Sept., 2019)
13. Gunjan Chhabra, Dr. Ajay Prasad, Dr. Venkatadari, "**Comparison and performance evaluation of human bio-field visualization algorithm**", Archives of Physiology and Biochemistry, The Journal of Metabolic Diseases, volume 125, issue 5, impact factor 2.110 (SCI), ISSN: 1381-3455 (Print) 1744-4160 (Online) (Nov. 2019).

14. Hasan, Mainul, Amogh Venkatanarayan, Inder Mohan, Ninni Singh, and Gunjan Chhabra. "**Comparison of Various DoS Algorithm**." International Journal of Information Security and Privacy (IJISP) 14, no. 1 (2020): 27-43. (SCOPUS) Jan. 2020.
15. Gunjan Chhabra, Dr. Ajay Prasad, Dr. Venkatadari, Dilip Sisodia, Ravinder Singh "**An Approach for the Transformation of Human Emotion and Energy-Field using Sound Therapy**", Turkish Journal of Computer and Mathematics Education, Vol.12 No.6 (2021), pg. 3172-3183, e-ISSN 1309-4653 (May 2021).
16. Chhabra, G., Sapra, V., Sharma, R., Bansal, R., Joshi, M., & Joshi, K. (2021). "**Eye State Classification Based on EEG Signals"**. Design Engineering, 2544-2551. (SCOPUS-2021).
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Place :

Date : **Signature of Investigator(s)**