

## CURRICULUM VITAE

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### Dr. Shivani

Assistant Professor  
Department of Mathematics  
Akai College of Basic Sciences  
Eternal University, Baru Sahib  
Himachal Pradesh  
[shivaniiranta26@gmail.com](mailto:shivaniiranta26@gmail.com)  
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### ACADEMIC QUALIFICATIONS:

S.No.	Degree	Subjects	Name of University	Year	%
1.	Ph.D.	Applied Mathematics	Eternal University, Baru Sahib (HP)	2023	Course Work - 66.9%
2.	M.Sc.	Applied Mathematics	Eternal University, Baru Sahib (HP)	2018	68.20%
3.	B.Sc. (Hons)	Mathematics, Physics, Chemistry	HPU	2016	66.65%

### RESEARCH EXPERIENCE:

#### **Ph.D. (Applied Mathematics)**

**Thesis Title:** Eigenvalues and singular values: recent development with applications  
[Supervisor **Dr. Sandipan Gupta** HOD Department of Mathematics, Eternal University, Baru Sahib, Himachal Pradesh ]

[Registration – 6 August 2019; Submission – 23 August 2023; Viva- 3 November 2023]

#### **M.Sc (Applied Mathematics)**

**Thesis Title:** Study of Eigenvalues & Eigenvector and Its Application [Supervisor **Dr. Sandipan Gupta** Dean of Akai College of Basic Sciences, Eternal University, Baru Sahib, Himachal Pradesh ]

### **TEACHING EXPERIENCE**

Employer	Post Held	Period of Employment	Total Experience
Eternal University	Assistant Professor	01-12-2023 to till date	1 year 4 months
Eternal University	Teaching Associate	01-08-2023 to 30-11-2023	4 months

### **SUBJECTS EXPOSURE :**

Courses Taught:

Class	Semester	Course	Credit
B.Sc (Hons.) Agriculture	1 <sup>st</sup>	Elementary Mathematics	2+0
B.Sc Microbiology	3 <sup>rd</sup>	Statistics	4+1
B.Sc (Hons.) Agriculture	3 <sup>rd</sup>	Statistical Methods	1+1
B.Sc Non-Medical	5 <sup>th</sup>	Statistics	3+0
B.Tech Food Technology	2 <sup>nd</sup>	Statistics	2+0
BBA	2 <sup>nd</sup>	Business Statistics	4+0
B.Sc Psychology	2 <sup>nd</sup>	Statistics	3+0
B.Tech. CSE	2 <sup>nd</sup>	Probability and Statistics	4+0
BA Humanities	6 <sup>th</sup>	Statistical Methods for Economics	4+0
M.Sc Mathematics	1 <sup>st</sup>	Algebra	4+0
M.Sc Mathematics	3 <sup>rd</sup>	Number Theory I	4+0
M.Sc Mathematics	2 <sup>nd</sup>	Programming in C	3+1
M.Sc Mathematics	4 <sup>th</sup>	Number Theory II	4+0
M.Sc Mathematics	2 <sup>nd</sup>	Calculus of Variation and Analytic Mechanics	4+0
M.Sc Mathematics	4 <sup>th</sup>	Integral Equation and transformation	4+0

### **COMPUTER KNOWLEDGE:**

- MS Word, Excel, PowerPoint
- Latex Software
- Matlab software
- Endnote

### **CONFERENCES ATTENDED:**

1. Presented a paper titled “Image Enlargement Technique Based On The Combination of SVD and Hermite Interpolation” in 2nd IEEE International Conference on Emerging Frontiers in Electrical and Electronic Technologies (ICEFEET 2022) held at the Department of Electrical Engineering NIT Patna (India) on June 24-25, 2022.

2. Presented a paper titled “Image Enlargement Scheme Based On Singular Value Decomposition and Cubic Spline Interpolation Through Random Numbers” in the International Conference on Industry 4.0 Technology 2022 (I4Tech2022) held at the Department of Instrumentation Engineering, Vishwakarma Institute of Technology, Pune (India) September 20-24, 2022.

### **LIST OF PUBLICATIONS IN JOURNALS:**

1. Gupta S and **Ranta S** (2022), “ Legendre wavelet based numerical approach for solving a fractional eigenvalue problem”. *Chaos, Solitons & Fractals* **SCI (Elsevier)**, 155, 111647. [ISSN: 0960-0779; Elsevier]. <https://doi.org/10.1016/j.chaos.2021.111647> [IF-7.8]
2. Gupta S, Sharma DK, and **Ranta S** (2022) A new hybrid image enlargement method using singular value decomposition and cubic spline interpolation. *Multimedia Tools and Applications* **SCI (Springer)**, 81(3), 4241-4254. [ISSN: 1573-7721 ; Springer]. <https://doi.org/10.1007/s11042-021-11767-2> [IF- 3.0]
3. **Ranta S**, Gupta S, Sharma DK. A new Legendre wavelet filter-based image super-resolution technique. *Multimedia Tools and Applications* **SCOPUS (Springer)** 2024 Feb 16:1-5. <https://doi.org/10.1007/s11042-024-18529-w> [IF- 3.0]
4. **Ranta S**, Gupta S, Sharma DK. Numerical solution of the multi-order fractional differential equation using Legendre wavelets and eigenfunction approach. *Partial Differential Equations in Applied Mathematics* **SCOPUS (Elsevier)** 2024 May 28:100739. <https://doi.org/10.1016/j.padiff.2024.100739>

### **PAPERS PUBLISHED IN CONFERENCE PROCEEDING:**

1. **Ranta S**, Gupta S, Sharma DK (2022), “Image Enlargement Technique Based On The Combination of SVD and Hermite Interpolation”. In2022 2nd International Conference on Emerging Frontiers in Electrical and Electronic Technologies (ICEFEET) Jun 24 (pp. 1-5). IEEE.
2. **Ranta S**, Gupta S (2022), “Image Enlargement Scheme based on Singular Value Decomposition and Cubic Spline Interpolation Through Random Numbers”. In2022 International Conference on Industry 4.0 Technology (I4Tech) Sep 23 (pp. 1-5). IEEE.

### **SEMINARS AND WORKSHOPS**

1. Attended “4<sup>th</sup> One Day Workshop on Significance of Intellectual Property Rights in Acemia (SIPRA-2024)” organized by IPR Cell, Eternal University, Baru Sahib (HP) on March 12, 2024.
2. Attended “two-day Machine Learning Techniques using AI workshop on 18 and 19 June 2024” organized by the Department of Academic Affairs A2Z EduLearningHb LLP.

## **DEPARTMENTAL AND UNIVERSITY SERVICE**

- Member, Two Day National Conference on “Current Scientific Inovations & Research in Plant Biology (CSIR-PB) 2022”, organized by Department of Botany, Akal College of Basic Sciences, Eternal University, Baru Sahib (27-28, May 2022)
- Member, Mathematics Olympiad, National Mathematics Day (2023)
- Member, Organizing Committee, National Science Day (2024)
- Member, Organizing Committee, 2<sup>nd</sup> International Conference on Pure & Applied Mathematics organized by Akal University, Talwandi Sabo in collaboration with Eternal University, Baru Sahib (20-22, November 2024)
- Member, Mathematics Olympiad, National Mathematics Day (2024)
- Member, Organizing Committee, National Science Day (2025)
- Member, Organizing committee, International conference on Pathways to Progress : The Strategic Role of Research in India’s Socio- Economic Development Organized by RDC, Institution’s Innovation Council in Collaboration with University Resource Centre, Eternal University, Baru Sahib

## **PERSONAL DETAILS:**

Name	:	Dr. Shivani
Father’s Name	:	Paniya Ram
Mother’s Name	:	Kala Devi
Date of Birth	:	24 January 1996
Marital Status	:	Married
Category	:	SC
Language Known	:	Hindi, English

### **Website/ Links:**

1. Google Scholar: [https://scholar.google.com/citations?user=c\\_qEC38AAAAJ&hl=en](https://scholar.google.com/citations?user=c_qEC38AAAAJ&hl=en)
2. Researchgate: [https://www.researchgate.net/profile/Shivani-Ranta?ev=hdr\\_xprf](https://www.researchgate.net/profile/Shivani-Ranta?ev=hdr_xprf)

## **DECLARATION:**

I declare that the information furnished by me is true to the best of my knowledge and belief and that nothing has been concealed.



(Shivani)