Tokyo, Japan
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Sujata Saini

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Summary

Dedicated PhD scholar in Data Science, Machine Learning, and NLP from Tokyo Metropolitan University with a strong academic and volunteer background. Tech community ambassador and founder, proficient in Python, R, and AI frameworks. Published researcher with rich experience in project management with UI/UX design and software development skills. Multilingual in English, Hindi, and basic Japanese.

Education

- **Tokyo Metropolitan University** — Tokyo, Japan
  Doctor of Philosophy in Computer Science — *April 2021-March 2025*
- **Chaudhary Ranbir Singh University** — Jind, India
  Master of Philosophy in Computer Science — *Aug 2015-April 2017*
- **Maharishi Dayanand University** — Rohtak, India
  Masters of Science in Computer Science — *Aug 2013-May 2015*
- **Maharishi Dayanand University** — Rohtak, India
  Bachelors of Science in Computer Science — *Aug 2010-May 2013*

Experience

- **Riken** — Tokyo, Japan
  Researcher, Tensor Learning Team — *May 2024 - Sep 2024*
  - **Developed novel tensor learning algorithms**: Focused on high-dimensional data analysis to improve the efficiency and scalability of deep learning models used for scientific research.
  - **Collaborated on AI projects**: Worked alongside AI researchers to refine algorithms and contributed to groundbreaking research in tensor-based learning.
  - **Published research findings**: Contributed to peer-reviewed publications and presented results in internal forums.
- **Tokyo Metropolitan University** — Tokyo, Japan
  Teaching Assistant, Takama Laboratory — *Apr 2024 - May 2024*
  - **Supported course delivery**: Assisted faculty in teaching advanced machine learning and NLP courses, providing guidance to students on assignments and projects.
  - **Contributed to research efforts**: Co-authored research papers and helped implement NLP models in lab projects, enhancing their performance through hyperparameter tuning and data preprocessing.
- **IEEE** — Tokyo, Japan
  Lead Ambassador, R10 Adhoc Committee on Entrepreneurship and Innovation — *Apr 2024 - Present*
  - **Led innovation initiatives**: Organized workshops and conferences focusing on entrepreneurship and innovation in technology, connecting professionals with emerging tech opportunities.
  - **Managed strategic collaborations**: Built partnerships with academic institutions and industry leaders to foster innovation in the IEEE R10 region.
- **MEXT Scholars Association** — Tokyo, Japan
  Head of Finance — *Aug 2024 - Present*
  - **Directed comprehensive financial operations**: Led all budgeting, expense tracking, and financial reporting, ensuring transparency and compliance with financial standards across the association.
  - **Developed strategic financial initiatives**: Designed and implemented long-term financial strategies to enhance sustainability and fund allocation efficiency, directly supporting the association's mission.
  - **Oversaw financial management for major events**: Allocated resources and managed finances for high-profile academic and cultural events, optimizing budget usage to maximize event impact.
- *Vice Head of Finance* — *Aug 2023 - Aug 2024*

- **Assisted in financial oversight**: Supported budgeting, financial tracking, and reporting processes, contributing to accurate record-keeping and adherence to financial protocols.
- **Supported strategic planning**: Collaborated with the Head of Finance to develop foundational financial plans, ensuring alignment with the association's goals and operational needs.
- **Managed event-specific budgets**: Played a key role in financial planning for smaller academic and cultural events, assisting in the allocation of resources to maintain budgetary control.

- **Forth Valley Concierge** Tokyo, Japan
  Internship *Jan 2023 - March 2023*
  - **Developed customer management strategies**: Worked on improving client service operations through customer journey mapping and feedback analysis.
  - **Created digital solutions**: Implemented digital tools to streamline concierge services, improving user experience and operational efficiency.

- **Microsoft Student Learn** Tokyo, Japan
  Ambassador/Founder at Tokyo Metropolitan University *Jan 2022 - Present*
  - **Founded and led student developer community**: Established the Microsoft Learn Student Ambassadors chapter at Tokyo Metropolitan University to promote technology education and learning.
  - **Organized workshops and hackathons**: Facilitated events to teach students about cloud computing, AI, and app development using Microsoft technologies.

- **Waffle** Tokyo, Japan
  Technovation Challenge Mentor *Dec 2021 - March 2022*
  - **Mentored young innovators**: Guided high school girls participating in the Technovation Challenge to develop innovative tech solutions for real-world problems.
  - **Provided technical and business expertise**: Helped teams in developing business plans and technical prototypes for mobile applications.

- **Women Techmakers** Tokyo, Japan
  Ambassador *Sep 2021 - Present*
  - **Promoted diversity in tech**: Organized events and workshops to empower women in technology, focusing on career development, networking, and tech skills training.
  - **Expanded community outreach**: Built a strong network of women in tech across Tokyo, encouraging participation in international events and local initiatives.

- **Google Developer Student Club** Tokyo, Japan
  GDSC Lead/Founder at Tokyo Metropolitan University *Aug 2021 - Aug 2022*
  - **Founded and grew GDSC chapter**: Established and led the first Google Developer Student Club at TMU, providing students with the opportunity to learn and grow in areas such as app development, web development, and cloud technologies.
  - **Organized hands-on workshops**: Hosted coding events, technical talks, and study jams to enhance the coding skills of the student community.

- **S.B.S.S** Jind, India
  Product Supervisor Intern, Bio-Metric Devices and Applications *Mar 2016 - Sep 2016*
  - **Supervised biometric projects**: Managed the development and testing of biometric applications for educational and governmental institutions.
  - **Improved operational efficiency**: Streamlined product deployment processes, reducing lead times by 20%.

- **Chaudhary Ranbir Singh University** Jind, India
  Teaching Assistant, Soft-Computing and Matlab *Sep 2015 - Feb 2016*
  - **Assisted in delivering courses**: Helped teach soft computing and Matlab courses, guiding students through practical exercises and project work.
  - **Conducted research activities**: Collaborated on research projects related to fuzzy logic and neural networks, contributing to academic publications.

Projects

- **Fine-Tuning Llama 2 for Financial Market Analysis**
  Udacity Project – Enhancing Meta Llama 2 7B Model for Financial Data Interpretation
  - **Fine-tuned the Meta Llama 2 7B model**: Improved the model's ability to interpret and generate insights specific to financial data, such as options trading metrics including strike prices, relative volume, and market sentiment indicators.
  - **Utilized AWS SageMaker for evaluation and refinement**: Adapted the model within the AWS environment to understand and respond to domain-specific financial terminology, enhancing its accuracy and relevance for financial analysis.
  - **Generated actionable insights**: Optimized model outputs to identify high volatility indicators based on options trading volumes, enabling more informed financial decision-making through enhanced data interpretation.

- **Bits&Bills: Mobile App for Digital Receipts**
  Personal Project – Streamlining Expense Management through QR Code Scanning
  - **Digitized Receipt Management**: Developed a mobile app to digitize physical receipts, allowing users to scan QR codes to securely save and manage receipts.
  - **Enhanced Expense Tracking Features**: Implemented features for efficient tracking, enabling users to categorize expenses, search by brand or date, and view expenditure history.
  - **Cross-Platform Design and Offline Accessibility**: Designed the app for cross-platform functionality, ensuring seamless performance on both iOS and Android devices, with offline accessibility and robust data security measures.

- **IndusDraw: Web Platform for Handwritten Indus Signs Data Collection**
  Personal Project – Leveraging Crowd-Sourcing and Machine Learning for Cultural Data Analysis
  - **Data Collection and Structuring**: Led the creation of a web-based platform for aggregating handwritten Indus sign data from diverse users, implementing crowd-sourcing methodologies for comprehensive data collection.
  - **Machine Learning Integration**: Applied advanced machine learning techniques to analyze the collected dataset, achieving a 70% improvement in prediction accuracy compared to baseline methods.
  - **Cultural Data Preservation**: Developed IndusDraw as a means to preserve and analyze historical scripts, contributing to the cultural and linguistic understanding of Indus symbols through innovative digital methodologies.

- **TMU-HUB: Mobile App for Mental Well-being**
  Personal Project – Promoting Mental Health and Offline Engagement
  - **Mental Health Monitoring Tools**: Designed a mobile application to monitor and improve mental well-being, allowing users to track emotional health metrics and engage in wellness activities.
  - **Engagement in Real-World Activities**: Developed features that promote active participation in offline pursuits, encouraging users to balance digital and real-world engagements.
  - **Technology Stack**: Built using Flutter, Google Cloud, and Firebase to ensure smooth performance and secure data management across mobile platforms.

- **Eco-Compact: Sustainable Financial Management App**
  Personal Project – Encouraging Eco-Conscious Financial Habits
  - **Eco-Conscious Financial Tracking**: Created a mobile application to help users manage expenses while prioritizing sustainability, integrating features that raise awareness about eco-friendly financial habits.
  - **Development Tools**: Leveraged Flutter and Microsoft Azure for reliable cross-platform functionality, robust data security, and cloud storage solutions.
  - **User Engagement with Environmental Impact**: Designed features that allow users to visualize the environmental impact of their purchases, promoting mindful spending aligned with eco-conscious values.

- **M.Phil Dissertation: Japanese Historical Character Recognition**
  Research Project – Deep CNN with DropBlock Regularization for Image Classification
  - **Innovative CNN Architecture**: Implemented a Deep Convolutional Neural Network (CNN) with DropBlock regularization to achieve high accuracy in Japanese historical character recognition.
  - **Enhanced Model Accuracy**: Surpassed state-of-the-art benchmarks with a remarkable 97% accuracy rate, setting a new standard in historical character recognition.

- **Impact on Historical Studies**: Contributed a novel approach to the classification of historical scripts, providing a foundation for further research in image-based historical data analysis.

Skills

- **Programming**: Python, R, MATLAB, C, C++, SQL, HTML, CSS, Javascript
- **Libraries**: Tensorflow, PyTorch, Keras, Caffe, OpenCV, Scikit-Learn, Numpy, SciPy, Matplotlib, Pandas, NLTK, fastai
- **Others**: AWS, Git, Azure, Docker, Kubernetes, Anaconda, RStudio, SAAS, Tableau, Figma

Publications

- **Sujata Saini,** Hiroki Shibata, Yasufumi Takama, *"Construction of Handwritten Indus Signs Dataset Employing Social Approach"* Special Issue, JACIII: Journal of Advanced Computational Intelligence and Intelligent Informatics, Volume-2, Issue-1, Jan 2024, pp. 122-128.
- **Sujata Saini,** Hiroki Shibata, Yasufumi Takama, *"Toward Construction of Handwritten Indus Signs Dataset"* The 10th International Symposium on Computational Intelligence and Industrial Applications (ISCIIA2022) Sep.23-Sep.25, 2022, Beijing, China.
- **Sujata Saini,** Vishal Verma, *"Japanese Historical Character Recognition using Deep Convolutional Neural Network (DCNN) with DropBlock Regularization,"* International Journal of Recent Technology and Engineering, Volume-8, Issue-2, July 2019, pp. 3510-3515.

Awards and Achievements

- First Prize, **3rd JTAF (Japan Taiwan ASEAN Forum)** Competition
- Tokyo Metropolitan University Scholarship Fund; October 2024
- Japanese Government (Monbukagakusho: MEXT) University Recommendation Scholarship under Flexible Design Scientist Interfaculty Program (FDSIP); April 2021 - March 2024
- AutoML Fall School Scholarship; Nov 2021

Conference Presentations

- Presented the research work in the **"CcS (Community-centric System) 2022",** International Seminar organized by TMU.
- Research paper presented in the **"The 10th International Symposium on Computational Intelligence and Industrial Applications (ISCIIA2022)"** Beijing, China.

Research Visits

- **Kyocera Minatomirai research center** ; Yokohama, Japan
- **Toshiba Corporate R&D Center** ; Kawasaki, Japan
- **CyberAgent AI Lab** ; Tokyo, Japan
- **AWS Amazon Office** ; Tokyo, Japan
- **Google Headquarters** ; Tokyo, Japan
- **Intel Headquarters** ; Tokyo, Japan
- **ORIX** ; World Trade Center Building, Tokyo, Japan
- **Bloomberg** ; Tokyo, Japan
- **JETRO Headquarters** ; Tokyo, Japan
- **Nippon Express** ; Tokyo, Japan

Seminars and Workshops

- Participated in **3rd JTAF (Japan Taiwan ASEAN Forum)** Competition for solving water and sanitation problems to achieve United Nations sustainable goals, Tokyo, Japan.
- Attended a workshop of **National Yunlin University of Science and Technology, Taiwan** on the latest technology and trends organized at TMU, Japan.
- Eco-Compact project participation in the **"2023 IEEE WIE Climate Tech Big Idea Pitch"** Competition.
- Participated in the **"UX (User Experience) Workshop 2021, 2022, and 2023"** organized by Flexible Design Scientist Interfaculty Program (FDSIP), TMU, Japan.
- Participated in the **"Microsoft Imagine Cup 2023"** whose mission was to solve one or more of the United Nations 17 Sustainable Development Goals.
- Participated in the **"The 4th Japan SciCom Forum 2022 (JSF22)"** organized by Okinawa Institute of Technology OIST, Japan.
- Participated in the **"AutoML Fall School 2021"** organized by Leibniz Universität Hannover, University of Freiburg, and Ludwig Maximilian University of Munich from Nov 8th-12th 2021.
- Attended a **"Deep Learning Talk on Kuzushiji Dataset"** by Tarin Clanaut (P.hD., National Institute of Informatics) at Otemachi, Tokyo, Japan.
- Attended the 9th CODH Seminar on **"Computer Vision with Labeled Data"** at NII, Tokyo, Japan.
- Participated in two-day International workshop on **"Hybrid Soft Computing and Data Analytics"** held at Department of Computer Science, South Asian University, New Delhi, India.

Certifications

- Certification of **Generative AI with AWS;** Amazon
- Certification of **Building Transformer-Based Natural Language Processing Applications;** Nvidia
- Certification of **WIE Climate Tech Big Idea Pitch Competition;** IEEE
- Certification of **Advanced Python Programming for Artificial Intelligence;** IFERP
- Certification of **Generative AI on Google Cloud;** Google
- Certification of **AWS Machine Learning Foundations 2022;** Udacity
- Certification of **Accelerating Data Engineering Pipelines;** NVIDIA
- Certification of **Creative Data Visualization for Narrative Designs;** Domestika
- Certification of **Effective Data Visualization: Transform Information into Art;** Domestika
- Certification of **AWS Cloud Practitioner;** Amazon Web Services (AWS)
- Certification of **DLI Platform Course for Instructors;** NVIDIA
- Certification of **Flutter Puzzle Hack;** Google
- Certified Diploma in **Advanced Software Management;** ZAD Institutions

Exhibitions Visits

- **Kiyoji Otsuji and Kzushi Ooura Photography Archive** ; Musahino Art University Museum, Tokyo
- **Eye Tracking Informatics** ; Root K Contemporary Art Gallary, Tokyo
- **Interference: Light, Vibrations and Wave** ; Tokyu Plaza, Tokyo

MOOC's Undertaken

- **Coginitive AI Classes** ; IBM
- **Computer Vision NanoDegree** ; Udacity
- **Machine Learning Crash Course with TensorFlow APIs** ; Google
- **MicroMasters Program of Statistics and Data Science** ; MIT
- **Introduction to Digital Humanities** ; Harvard University, edX

Cultural Exchange

- **Sagamico Berry Garden Visit organized by IEEE R10 Japan Section** ; Sagamihara, Tokyo
- **Teaching Cooking Indian Food organized by HIFA at Tobu Kaikan** ; Hino, Tokyo

Invited Talks

- **Advanced Python Programming for Artificial Intelligence** ; IFERP

Volunteer Activities

- **Volunteer, Conference Organizer** ; Chiba, Japan
- **Volunteer, TAKEOFF Tokyo** ; Tokyo, Japan
- **Volunteer, International English Camp for Junior High School students** ; Iwai, Chiba
- **Volunteer, Japan Science Foundation Summit 2023** ; Okinawa Institute of Technology, Japan
- **Volunteer, Interviewed by LabBase to improve their products** ; Tokyo, Japan
- **Volunteer, Voice samples for an NLP project for a Childcare product startup** ; Israel
- **Volunteer, AAVAAHN' 2018 (2nd National Institutes Students' Meet)** ; JNU, India
- **Volunteer, Indian International Science Festival**; IIT Delhi, India

Professional Memberships

- **IEEE Student Membership**
- **IEEE Computational Intelligence Society**
- **IEEE Young Professionals**
- **IEEE Women in Engineering**
- **IEEE Communication Society**
- **NIPS (Neural Information Processing System)**
- **ODSC (Open Data Science Conference) Global**
- **COSEAL (Configuration and Selection of Algorithms)**

Community Memberships

- **tinyML**
- **2d3d.ai**
- **CreativeTokyo**
- **Tokyo Python Society**
- **TAIT (Tokyo AI Talks)**

- **Machine Learning Tokyo**
- **MSA (MEXT Scholarship Association)**

Hobbies

Cultural Dance, Playing Badminton, Yoga, Blogging and Reading Articles

Languages

English (Fluent), Hindi (Native), Japanese (N5), and German (Basic)

References

- **Prof. Yasufumi Takama,** Takama Laboratory, TMU: ytakama@tmu.ac.jp
- **Dr. Shibata,** Takama Laboratory, TMU: hshibata@tmu.ac.jp