# Sujit Kumar Kamaraj

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## EDUCATION

**University of Utah** — **Aug 2025 - Present**
PhD, Computer Science — Salt Lake City, UT

**University of Utah** — **Aug 2023 - May 2025**
Masters of Science, Computer Science – 3.975 CGPA — Salt Lake City, UT

**Vellore Institute of Technology** — **Aug 2019 - May 2023**
BTech, Computer Science and Engineering – 8.77 CGPA — Vellore, Tamil Nadu, India

## WORK EXPERIENCE

**The University of Utah – Research Assistant** — **Oct 2023 – Present**
Human Computer Interaction Researcher — Salt Lake City, Utah, US

- Conducting a multi-site study on how generative AI is transforming higher-education and instructional practices.
- Analyzed how rare-disease communities use social platforms to participate in institutional processes.
- Developed touchscreen-based web solutions to assess and measure cognitive performance.

**The Centre of Excellence for Road Safety (CoERS) – IIT Madras** — **Dec 2022 – Jun 2023**
Computer Vision Research Intern — Chennai, Tamil Nadu, India

- Spearheaded the development of cutting-edge computer vision solutions aimed at enhancing road safety across Indian roadways.
- Trained and evaluated the YOLOv7 deep learning model, achieving a F1 score of 61.2% on an extensive dataset comprising 10,000 images and encompassing 34 diverse classes such as cars, buses, bikes, traffic signs, and pedestrians.
- Implemented innovative techniques utilizing image contours to enhance detection in nighttime and low-light conditions.
- Integrated the CRAFT and PARSeq models seamlessly to establish a high-performance real-time scene text recognition pipeline.

**University of Ottawa – Mitacs Research Internship** — **May 2022 – Aug 2022**
Research Intern — Ottawa, Canada

- The goal of the project was to study existing feature selection methods and come up with a novel feature selection algorithm that addresses the class-imbalanced problem in high-dimensional datasets.
- Implemented and tested standard feature selection methods like ReliefF, Chi-Square and SVM-RFE on high-dimensional class-imbalanced datasets.
- Implemented a novel feature selection method that was developed for high-dimensional class-imbalanced datasets.
- Initial results show that the novel feature selection algorithm developed performs better than existing methods.

**Vegam Industries** — **May 2021 – Sep 2021**
NLP Intern — Vellore, Tamil Nadu, India

- Worked on text generation and paraphrasing of text based on the given situation and emotion.
- Worked on text generation models like GPT-2, BERT, LSTMs and Senti-GAN.
- T5 and BART transformer models were used for the paraphrasing task.

**Samsung R & D Institute** — **Oct 2020 – Mar 2021**
Project Intern — Bengaluru, Karnataka, India

- Engineered a language classifier for media titles (movies and songs) across six languages, optimizing text-to-speech pronunciations.
- Implemented NLP and machine learning techniques, including N-Gram, SVM, Neural Networks, MuRIL, LSTMs, and tokenization, achieving a peak accuracy of 92%.

## PUBLICATIONS

- **Kamaraj, Sujit**, and Vineet Pandey. *Investigating the Process–Platform Gap: How a Patient Community's Efforts Teach Us About the Limits of Social Platforms in Supporting Institutional Processes.* Proceedings of the ACM Conference on Supporting Groupwork (GROUP 2027) --- to appear.

- **Kumar, S.**, Rajesh, D.D., Pranesh, S., Kollipara, V.H., Agrawal, G.K., Anbarasi, M. and Valarmathi, J., 2022. Classification of Indian media titles using deep learning techniques. International Journal of Cognitive Computing in Engineering, 3, pp.114-123.

## PROJECTS

**Convection in Earth's Mantle - A Visualization** **Jan 2024 – May 2024**

https://github.com/sujitkamaraj/Convection-in-Earth-s-Mantle---A-Visualization

- Visualized and analyzed the time series dataset of the Earth's mantle.
- Worked with high performance computing to visualize the large dataset.
- Observed inverse correlations between thermal expansivity anomalies and spin transition induced density anomalies.
- Visualizations were done using Paraview.

**Birds in the United States – A Visualization** **Aug 2024 – Nov 2024**

https://sujitkamaraj.github.io/bird-tracker/

- Built an interactive visualization tool that allows users to search for specific bird species and view the states where that bird is present.
- Enable state-level exploration by displaying the number of bird species in a selected state and critical features about each species (such as lifespan and top birds found in that state).
- Used JavaScript, D3, HTML, CSS and Bootstrap.

## SKILLS

- **Proficient Skills:** Human Computer Interaction, Data visualization, Machine learning, Data Science, Natural language processing, Artificial intelligence.
- **Programming:** JavaScript, Python, MATLAB, R, SQL, Java, C, C++, HTML, CSS.
- **Software:** Unity Game Development, Figma, Git, LaTeX, Microsoft Office (Excel, PowerPoint, Word).

## EXTRACURRICULAR ACTIVITY

**Juvenile Care VIT** **Nov 2019 – May 2023**

Senior Core Member Vellore, Tamil Nadu, India

- Juvenile Care VIT is a youth led organization working for child rights and child abuse eradication in the city of Vellore.
- The mission of this organisation is to provide a platform for youth to come forward and work for the alleviation of society.
- I was also part of the "Design Team" and created multiple posters for our social media page.