Akash Deep Singh

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EDUCATION

University of California, Los Angeles (UCLA)	Los Angeles, CA
Ph.D. (& MS) in Electrical and Computer Engineering	*Sep. 2018 – Mar. 2023*
IIIT-Delhi	New Delhi, India
B.Tech in Electronics and Communication Engineering	*Aug. 2014 – May 2018*

EXPERIENCE

Applied Scientist, Machine Learning — April 2023 – Present
Ownwell Inc — *Austin, TX*

- Developed models for housing price prediction, document processing, and question-answering.
- Conducted prompt engineering and fine-tuning of Large Language Models (LLMs) to optimize performance and adapt them for custom tasks.
- Collaborated with cross-functional teams to brainstorm and successfully integrate new AI functionalities into the product.
- Utilized machine learning techniques to automate and significantly improve the efficiency of internal and external processes.
- ML Stack: Transformers, multi-modal fusion, gradient boosting, and temporal self-attention
- Tech Stack: Python, PyTorch, Scikit-learn

Applied Scientist Intern — June 2022 – September 2022
Amazon — *Seattle, WA*

- Developed ML models to detect fraud from user behavior patterns (mouse, keyboard gestures) and browsing data for the Buyer Risk Prevention (BRP) Team. Improved the performance of the production model by 6.96%.
- ML Stack: Temporal models such as LSTMs, multi-modal fusion, gradient boosting, and temporal self-attention
- Tech Stack: Python, PyTorch, Scikit-learn

Research Intern — June 2021 – August 2021
Nokia Bell Labs — *Virtual*

- Developed a self-supervised framework for extracting features from RF+camera data using contrastive learning. The framework outperformed its supervised counterpart on downstream tasks even with less training data – accepted at IEEE ICC 2022.
- ML Stack: Self-supervised learning, contrastive learning, CNNs, multi-modal fusion, and self-attention
- Tech Stack: Python, PyTorch, Scikit-learn

AWARDS, ACHIEVEMENTS AND LEADERSHIP ROLES

- Amazon Doctoral Fellowship, **2021-22** – Tuition and Stipend
- Electrical and Computer Engineering (ECE) Departmental Fellowship, **2018-19** – Tuition and Stipend
- Travel Grant, USENIX Security 2021
- Graduate Student Association (GSA) Presidential Service Award, **2020-21**
- Semi-finalist, UCLA Grad Slam, **2020**
- Served as the Elections Commissioner / Attorney General for the GSA, 2 terms, **2020-22**
- Founding committee, ECE mentor of the year award that is awarded to the best mentors in the department, **2021**
- Dean's List for academic achievement, IIIT-D, **2017**
- First Prize, Innovation Challenge, Innovation Challenge (IIIT-D), **2017**
- National Talent Search (NTSE) Scholar, Government of India, **2010**

SELECTED PUBLICATIONS (GOOGLE SCHOLAR ⤢)

[CVPR 2023] Depth Estimation from Camera Image and mmWave Radar Point Cloud

[Nature SR 2022] Temporal convolutional networks and data rebalancing for clinical length of stay and mortality prediction

[Usenix Security 2021] I Always Feel Like Somebody's Sensing Me! A Framework to Detect, Identify, and Localize Clandestine Wireless Sensors

[mmNets 2019] RadHAR: Human Activity Recognition from Point Clouds Generated through a Millimeter-wave Radar

[ACM Sensys 2020] UWHear: Through-wall Extraction and Separation of Audio Vibrations using Wireless Signals

[JAMIA 2021] On collaborative reinforcement learning to optimize the redistribution of critical medical supplies throughout the COVID-19 pandemic

[ICC 2022] Self-Supervised Radio-Visual Representation Learning for 6G Sensing