# Akash Deep Singh

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## Education

**University of California, Los Angeles (UCLA)** — Los Angeles, CA
*Ph.D. in Electrical and Computer Engineering* — *Sep. 2018 – Mar. 2023*
*M.S. in Electrical and Computer Engineering* — *Sep. 2018 – Mar. 2020*

**IIIT-Delhi** — New Delhi, India
*B.Tech in Electronics and Communication Engineering* — *Aug. 2014 – May 2018*

## Experience

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

- First ML hire; built the entire AI org and production stack from scratch—owning strategy, architecture, and execution.
- Automated end-to-end document processing with LLM agents, scaling from 0 to 10M pages / year and cutting review time by 95%
- Designed a property-tax-appeal auto-evaluation framework that reduced manual case review time by 80% and increased daily throughput by 7×.
- Shipped predictive models for property-tax liability, marketing conversion, and revenue estimation, influencing $50M in ARR decisions.
- Built vertical LLM agents to automate key workflows—customer verification, home-insurance monitoring, ID verification; driving automation across 4 distinct business functions.
- Fine-tuned proprietary LLMs for domain-specific Q&A, able to answer 45% of incoming customer questions.
- ML Stack: LLMs, Transformers, Multimodal Fusion, Gradient Boosting, RAG, Fine-tuning
- Tech Stack: Python, Typescript, PyTorch, Scikit-learn, AWS

**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* — *Remote*

- 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

## Technical Skills

**Programming Languages:**
*Proficient:* Python, Typescript (with LLM tools)
*Prior Experience:* MATLAB, C, JavaScript

**AI & Machine Learning:**
*General Frameworks:* PyTorch, scikit-learn
*LLM:* Transformers, Hugging Face libraries, model fine-tuning, prompt engineering
*Key Skills:* LLM agent pipelines, predictive analytics, NLP pipelines, model training, evaluation, deployment

## 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

**[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