CAT P. LE

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SUMMARY

Machine learning scientist with 7+ years of experience designing and deploying AI solutions in computer vision and natural language processing. Skilled in data analysis, image generation, and time-series forecasting, with proven success delivering scalable, high-impact AI systems through cross-functional collaboration.

Education

DUKE UNIVERSITY   Durham, NC
Ph.D., Electrical and Computer Engineering   May 2023
Thesis: *Task Affinity and Its Applications in Machine Learning*
Advisor: Dr. Vahid Tarokh

CALIFORNIA INSTITUTE OF TECHNOLOGY   Pasadena, CA
M.S., Electrical Engineering, GPA: 4.00   Jun 2017
Advisor: Dr. Babak Hassibi

RUTGERS UNIVERSITY   New Brunswick, NJ
B.S., Electrical and Computer Engineering, GPA: 4.00   May 2016
Honors: Summa Cum Laude, Matthew Leydt Society, John B. Smith Award, Tau Beta Pi

Professional Experience

DUKE UNIVERSITY – Postdoctoral Fellow   May 2023 – Present
- Develop a flow-based generative model for backscatter imaging of titanium alloys.
- Design surface-based detector using Transformer, Attentional Copulas for mechanical malfunctions.
- Analyze upstream virus production data and predict the optimal harvest time for maximum yield efficiency.

AMAZON - Research Scientist   Jun 2022 – Sep 2022
- Develop open-domain dialogs evaluation systems with BERT, LSTM, and causal inference analysis.
- Help improve the prediction performance for the customer's and expert's ratings.

MOTOROLA SOLUTIONS - Software Engineer   Jun 2017 – Aug 2018
- Develop a Camera Shutter Synchronization System with LED Strobing for license plate recognition cameras.
- Improve energy consumption and the performance of the license plate and facial recognition cameras.

Recent Publications

Generative Models and Bootstrapping for Titanium Alloy Microstructure Analysis   ICPR 2025
Cat P. Le, M. LaRosa, Vahid Tarokh

CATE Estimation With Potential Outcome Imputation From Local Regression   UAI 2025
Ahmed Aloui, Juncheng Dong, Cat P. Le, Vahid Tarokh

Perceiving Copulas for Multimodal Time Series Forecasting   WSC 2024
Cat P. Le, Chris Cannella, Ali Hasan, Yuting Ng, Vahid Tarokh

Improving Open-Domain Dialog Evaluation with a Counterfactual LSTM   IWSDS 2023
Cat P. Le, Luke Dai, Michael Johnston, Yang Liu, Marilyn Walker, Reza Ghanadan   Best Paper Award

Task Affinity with Maximum Bipartite Matching in Few-Shot Learning   ICLR 2022
Cat P. Le, Juncheng Dong, Mohammadreza Soltani, Vahid Tarokh

Skills

Technical: Python, C++, Matlab, Numpy, Scipy, Scikit-learn, Pandas, Matplotlib, OpenCV, Tensorflow, Keras, Pytorch
Research Area: Neural Network Architecture, Computer Vision, Natural Language Understanding
ML Framework: Transfer Learning, Continual Learning, Few-Shot Learning, Prompt Tuning, Reinforcement Learning