Keerthana Gurushankar

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EDUCATION

Carnegie Mellon University
PhD Student, Computer Science — Aug 2022 – Present
B.S., M.S., Mathematics, QPA: 3.80 — Aug 2017 – May 2021

RESEARCH EXPERIENCE

- **Graduate Research Assistant, CMU** — Aug 2022 – Present
  Data-driven Algorithm design for Human Evaluation settings
  - Developing & testing online matching algorithms to automate paper-reviewer assignments for academic journals
  - Scraped dataset of submissions (used Python, APIs), computed similarity scores using existing NLP methods
  - Designing and testing performance of various matching algorithms for maximizing similarity score of assignment
- **Research Programmer, CMU** — May 2022 – Aug 2022
  Quantum Compilation with provable guarantees
  - Developed practical implementation of well-known theoretically correct algorithm for quantum circuit synthesis
  - Contributed parallelized linear algebraic back-end; used parallel data structures & optimization heuristics for speed
  - Achieved 10-fold speed up on base algorithm, while producing shorter optimized circuits
- **Pre-doctoral Researcher, CMU** — May 2021 – May 2022
  Neural modeling with Information theoretic decompositions
  - Performed research projects modeling neural data with information theory, leading to publication in top conference
  - Deduced tractability results using probability, linear algebra, algorithmic methods & data visualization
  - Collaborated with and presented work to researchers of diverse technical backgrounds

PROJECTS

- **Deep Learning Library Implementations** — Aug 2022 – Dec 2022
  - Built a complete deep learning library from scratch, with basic implementations of PyTorch and Numpy
  - Wrote efficient CPU/GPU backends using C++/CUDA, autodiff support, modules for optimizers & data loaders
- **Statistical Detector for Cortical Spreading Depressions** — Aug 2018 – Apr 2019
  - Designed & implemented (in MATLAB) a statistical detector for anomalous brain waves using ECoG data
  - Modeled & tested Maximum Likelihood Detection, to automate work currently done by expert inspection

SKILLS

Programming Languages: Python, C/C++, SML, MATLAB/Mathematica

SELECTED COURSEWORK

Graduate Artificial Intelligence	Deep Learning Systems	Theorists Toolkit	Game Theory
Automated Reasoning	Programming Languages	Probability & Computing	Coding Theory

HONORS/AWARDS

2019 D. E. Shaw Discovery Fellowship - top 30 from over 200 applicants to attend prestigious fellowship programme
2018 Putnam Competition - ranked in top 500 nationally
2017 International Physics Olympiad Selection Camp - top 35 students in Physics nationally
2017 NIOS Senior Secondary Board Examination - Highest score among 300,000 students