Suhas Kotha

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WORK EXPERIENCE

CMU SCS

RESEARCH ASSISTANT   *2/21 – Current*

Language Model Fine-tuning: Offered insight into catastrophic forgetting in language models through Bayesian inference. Mentored by Aditi Raghunathan.

Formally Verified ML: Proposed and solved the task of provably over-approximating the preimage of a neural network. Mentored by Huan Zhang, Krishnamurthy Dj, & Zico Kolter.

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Jane Street   Python, OCaml, SQL

QUANT TRADING INTERN   *5/22 – 8/22*

Improved algorithmic strategy for bond RFQ's. Developed providing algorithm based on commodities market micro-structure

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NASA (SpaceML)   Tensorflow

MACHINE LEARNING INTERN   *6/20 – 1/21*

Proposed and developed self-supervised scene classification tool for sparsely labeled satellite imagery, currently used by NASA (report)

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Cesion, LLC   HTML/CSS/JS

CO-FOUNDER OF ZURIEL   *3/18 – 5/20*

Successfully launched platform that redirected advertising revenue into funding schools and incentives for completing homework

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UC Santa Cruz   Python

RESEARCH INTERN   *6/19 – 8/19*

Designed machine classification methods for newly discovered Weak CN stars in Andromeda Galaxy (poster)

LANGUAGES

Python, OCaml, C/C++, Java, SQL, Lean

EDUCATION

Carnegie Mellon University

MS+BS COMPUTER SCIENCE, 2020-2024

Selected Coursework

- ➤ (PhD) Automated Reasoning & SAT
- ➤ (PhD) Probabilistic Combinatorics
- ➤ (PhD) Analytic Convex Geometry
- ➤ (PhD) Foundations of Modern ML
- ➤ (PhD) Algorithms for Big Data
- ➤ (PhD) Convex Optimization
- ➤ (PhD) Generative Computer Vision
- ➤ (PhD) Intermediate Statistics
- ➤ Parallel Computer Architecture

PUBLICATIONS

Understanding Catastrophic Forgetting in Language Models via Implicit Inference
Suhas Kotha, Jacob Springer, Aditi Raghunathan
Preprint

Provably Bounding Neural Network Preimages
Suhas Kotha*, Christopher Brix*, Zico Kolter, Krishnamurthy Dvijotham[†], Huan Zhang[†]
NeurIPS 2023 (Spotlight Award)

SERVICE

- ➤ Reviewer for NeurIPS, ICML, ICLR, TMLR
- ➤ Co-founded CMU Undergrad TCS Community

TEACHING

- ➤ Instructor for Type Theory (S22, F22)
- ➤ TA Functional Programming (S21, S22)
- ➤ TA Algorithm Design/Analysis (F22)
- ➤ TA Math Foundations for CS (F21)

ACHIEVEMENTS

- ➤ Putnam Top 500
- ➤ USA Math Olympiad
- ➤ USA Computing Olympiad Platinum