Gautam Mittal

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EDUCATION

UC BERKELEY
B.S. Electrical Engineering & Computer Science (EECS)
Expected May 2022 | Berkeley, CA
GPA: 3.88 / 4.0
Dean's List (3x)
CS186 uGSI (database TA) fa21, sp22
Cal Hacks • UC Jazz • Statistics Undergraduate Student Association

SKILLS

LANGUAGES
Python • JavaScript • Swift • Java • C
Go • SQL • Scheme • OCaml • Ruby
RISC-V • x86 • Objective-C

TOOLS
PyTorch • JAX/Flax • TensorFlow
NumPy • Node.js • Flask • Rails • HTML
CSS • React • Max/MSP • AWS • GCP
UNIX • Git • MongoDB • PostgreSQL

LINKS

GitHub: github.com/gmittal
LinkedIn: linkedin.com/in/mittalgautam
Website: gautammittal.com

COURSEWORK

CS61B: Data Structures
CS61C: Computer Architecture
CS70: Discrete Math & Probability
CS170: Algorithms & Intractability
CS161: Computer Security
CS162: Operating Systems
CS164: Languages & Compilers
CS186: Database Systems
CS188: Artificial Intelligence
CS189: Machine Learning
CS194-26: Computer Vision
CS285: Deep RL (Graduate)
EECS16A: Linear Algebra & Circuits
EECS16B: Diff. Equations & Control
EECS126: Random Processes
MATH53: Multivariable Calculus
CS195: Society & Computing

EXPERIENCE

TESLA | Machine Learning Intern, Autopilot
May 2021 – August 2021 | Palo Alto, CA

- Engineering task owner for all offline 2D networks: supported new autolabeling, tracking, simulation, AutoHighbeam, and 3D network efforts
- Implemented SoTA panoptic segmentation, road semantics, and object detection models along with new data, training, evaluation, and visualization infrastructure from scratch
- Internship work demoed by Autopilot leadership at AI Day (see 1:11:19 & 1:31:30 on livestream)

RISELAB, UC BERKELEY | Undergraduate Researcher
September 2019 – Present | Berkeley, CA

- Co-implemented system for training a relational query optimizer without expert demonstrations and experimented with generative models, feature perturbation, and planning techniques to improve agent performance
- Co-authored [2] and presented work at RISE Retreat (2020, 2021)

GOOGLE | Research Intern, Google Brain
May 2020 – January 2021 | Mountain View, CA

- Researched diffusion models for non-autoregressive generation and post-hoc coonditional infilling; published [1]
- Implemented and evaluated Transformer-based models, fast sampling mechanisms, and MusicVAE data pipelines with JAX, Flax, and TensorFlow

STRIPE | Software Engineering Intern
May 2019 – August 2019 | San Francisco, CA

- Built and shipped an end-to-end data export pipeline for Connect, used daily by Lyft, DoorDash, and others to process millions of financial objects

Earlier professional experience is available at linkedin.com/in/mittalgautam. Additional open-source work and projects available at github.com/gmittal.

PUBLICATIONS

[1] G. Mittal, J. Engel, C. Hawthorne, and I. Simon. Symbolic music generation with diffusion models. *Proceedings of the 22nd International Society for Music Information Retrieval Conference*, 2021.

[2] Z. Yang, W.-L. Chiang, S. Luan, G. Mittal, M. Luo, and I. Stoica. Balsa: Learning a query optimizer without expert demonstrations. *Proceedings of the 2022 International Conf. on Management of Data (SIGMOD '22)*, 2022.

AWARDS

2020 Contrary Talent Fellow (inaugural cohort)
2019 IEEE Eta Kappa Nu Member (top 25% of Berkeley EECS)
2019 Accel Scholar (run by Accel Partners & Berkeley EECS)
2019 Kleiner Perkins Engineering Fellow
2018 Regents' and Chancellor's Scholarship (top 2% of incoming class)
2018 US Marine Corps & Louis Armstrong Jazz Awards
2016 MIT Zero Robotics Challenge International Finalist
2015 Top 10 at MHacks, PennApps (international hackathons)
2015 Apple WWDC Scholarship