

# 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

Regents' and Chancellor's Scholar  
Accel Scholar

Kleiner Perkins Engineering Fellow  
Eta Kappa Nu (EECS Honor Society)  
Dean's List (3x)

CS186 uGSI (database TA) • 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](https://github.com/gmittal)

LinkedIn: [linkedin.com/in/mittalgautam](https://www.linkedin.com/in/mittalgautam)

Website: [gautammittal.com](https://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
- Contributed to spinning up a new segmentation data engine, working closely with senior leadership and downstream projects to refine ontology and steer large human labeling team to improve dataset quality
- Presented model to Elon Musk and had 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

- Researching deep reinforcement and unsupervised learning for databases
- 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 conference paper (accepted to **SIGMOD 2022**) on learned query optimization and presented work at RISE Retreat (2020, 2021)

### GOOGLE | Research Intern, Google Brain

May 2020 – January 2021 | Mountain View, CA

- Researched deep energy-, score-, and diffusion-based generative models for symbolic music generation under the Magenta team
- Designed two-stage non-autoregressive model for unconditional generation and gradient-based sampling for post-hoc infilling
- Implemented and evaluated Transformer-based models, fast sampling mechanisms, and MusicVAE data pipelines with JAX, Flax, and TensorFlow
- First author conference paper published at **ISMIR 2021**

### STRIPE | Software Engineering Intern

May 2019 – August 2019 | San Francisco, CA

- Built an end-to-end data export pipeline for Connect, used daily by Lyft, DoorDash, and others to process millions of financial objects
- Refactored export infrastructure to use a concurrent GraphQL resolver to enable API-consistent data, faster exports, and increased security

Earlier professional experience is available at [linkedin.com/in/mittalgautam](https://www.linkedin.com/in/mittalgautam).

Additional open-source work and projects available at [github.com/gmittal](https://github.com/gmittal).

## 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