Misha Lubich

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Education

University of California, Berkeley — Berkeley, CA
Bachelor of Computer Science — *Expected May 2023*

- GPA: 3.65
- Relevant Coursework: Efficient Algorithms and Intractable Problems, Data Structures and Algorithms, Computer Security, Computer Architecture, Introduction to AI, Discrete Math and Probability Theory, Data Science with Venture Applications, Entrepreneurship Lab

Work Experience

Machine Learning Intern — May 2021 - Aug 2021
Berkeley Lab

- Used and analyzed clustering algorithms like K-Means, Hierarchical Clustering.
- Helped show that certain factors hypothesized by literature (i.e. dams) are not as significant more variables are involved. Helped my team develop future directions to improve our ML model.
- Implemented data structures that standardized and improved workflow
- Made generalized plotting library that my team has since adopted
- Co-authored a published paper in the *Water* Journal!

Software Engineer Intern — Aug 2020 - Dec 2020
Honda Americas LLC.

- Working on clustering algorithms for COVID-19 deliveries, collaborated with R&D Honda
- Personally read 20-30 white papers on productivity and team management. Implemented workflow to get us back on track — growing as a leader
- Presented 2 times, for our class and team of engineers at Honda

Software Engineer Intern — Mar 2020 - May 2020
Communities for a Better Environment

- Developed the first tools to easily access US census data: ACS and PUMS data
- Also highlighted environmental pollution and health risks disproportionally impacting marginalized communities
- Empowering individuals from marginalized communities to learn data science and fight back against corporations!

Software Engineer Intern — May 2020 - Aug 2020
Sparklist

- As many as 60% of Americans feel lonely. Social connection is the strongest factor against depression
- Developed a web-scraper script that collects all emails of student organizations with Regex, BeautifulSoup4, Selenium
- Communicating with UC Berkeley clubs to use our app to organize and host events freely and easily on campus.

Projects

Pintos
Built a fully functional OS. 700,000+ lines in both C and x86. Implemented floating operations support, scheduler, syscalls, user threads and file system!

TMTrack
Scrapes *Billboard Top 100* all-time and finds (instrumental) mp3's for them. Built the first dataset that has: 1) All pop songs 2) YouTube links/MP3 files.

IntelliPacman
Built many *intelligent* Pacman agents: Minimax, Classical Planning, Bayes Nets, and Reinforcement Learning (Q-Learning) (Achieved over 80% accuracy).

RISC-V CPU
Built an entire CPU in Logism from scratch! Optimized with pipelining and dual read/write ports. Handles memory alignment and uses ROM control logic.

Dropbox
Built an end-to-end encryption file system, with sharing privileges and focus on efficiency ($O(1)$ appends). Secure even in untrusted database. Holds no persistent state!

Gitlet
Designed and implemented a lightweight version of Git from scratch. Built a custom commit tree data structure. Has all core functionality: from commit to merge!

Technical Skills

• Python • C/C++ • Go • Java • Linux • Pandas • SQL • SQLServer • Spring Boot • OpenMP
• Sklearn • JUnit • HTML/CSS • React Native • Flask • Selenium • Assembly (RISC-V, x86) • LaTeX