ABEL **YAGUBYAN**

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Education

University of California, Berkeley Sept 2018 - May 2022
Computer Science and Applied Mathematics – B.A.

• **Courses:** Data Structures, Algorithms, Parallel Computers, Databases, AI/ML, Operating Systems

Northwestern University Sept 2022 - June 2023
Computer Science (Concentration in Machine Learning and Distributed Systems) – M.S.

• **Courses:** Generative Deep Models, Advanced Networking, Microprocessor Systems

Skills

Languages: C/C++, Python, Java, Go, Rust, PHP, Javascript
Technologies: CUDA, UPC++, MPI, PyTorch, TensorFlow, XGBoost, MySQL, MongoDB, Bash, Git, Docker

Current/Prior Engagements

Northwestern University's Prof. Guo Evanston, IL
Research Assistant June 2022 – Present

• Contributor to Professor Dongning Guo's and PhD student Yiming Zhang's project titled as "Deep Reinforcement Learning for Scheduling, Power Control, and Rate Adaptation in Cellular Networks":
  • Speeding up project simulations with the help of Python, GPU programming, and CUDA

Lawrence Berkeley National Laboratory Berkeley, CA
Research Assistant June 2022 – Present

• Working with the Pagoda Project team on a distributed system C++ library, known as UPC++, to:
  • Develop and deploy automated performance regression testing for UPC++ using crons and Python
  • Implement benchmarks in UPC++ (OSU micro-benchmarks, Parallel Research Kernels, Bale benchmarks) and compare to other libraries such as MPI and SHMEM

Apple x UC Berkeley Remote
Software Engineering Intern May 2021 – Aug 2021

• Project lead in collaboration with Apple and UC Berkeley's CS61C: Computer Architecture course (myself as a Teaching Assistant for that course), introduced Computer Architecture-based projects to 4000+ HBCU students by implementing the source code using C, Python, SIMD, OpenMP, and Assembly

UC Berkeley's Prof. Garcia Berkeley, CA
Research Assistant June 2019 – May 2022

• Introduced new online examination features to 3,000+ students with 100% satisfaction by implementing an interactive RISC-V compiler to PrairieLearn, an online examination platform, for UC Berkeley Computer Architecture courses using a combination of Assembly (RISC-V), Python, C, JS, and Docker
  • Published paper with Prof. Garcia for the SIGCSE '22 Technical Symposium

Projects

Fibonia May 2019 – June 2021

• Co-Founded and programmed the source code for the web and Apple mobile app of Fibonia - an AI service that aggregates reliable information from multiple sources onto a single feed
  • Gained ~200 customers by implementing powerful NLP models, web scrapers, and helpful search engine features using Python, Flask, PHP, Selenium, MongoDB, and C#

Scalpel Jan 2022 – June 2022

• Reduced popular modern Deep Neural Network (DNN) model sizes (i.e., AlexNet, LeNet-5, etc.) by up to~80% and achieved up to ~3.5x speedup by customizing DNN pruning techniques to the underlying hardware parallelism (Microcontroller, CPU, and GPU) using Python and C++