

Gabriel Montague

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EDUCATION

University of California, Berkeley

Master of Engineering, Data Science & Systems Program

Expected Graduation: May 2019

Harvard College, Cambridge Massachusetts

Bachelor of Arts, Honors, Computer Science

Graduated May 2018

GPA: 3.61/4

TECHNICAL SKILLS

- 10 years of experience with **HLSL** and 3D modeling, rendering, animation in Autodesk Maya
- 8 years of experience with **C++** using various graphics and application frameworks, STL and Boost libraries
- 7 years of experience with **Python** and **JavaScript**
- Other languages – **MATLAB** (2 years), **Objective C** (3 years), **C#** (2 years), **OCaml** (2 years), **PHP**, **Swift**

WORK EXPERIENCE

University of California, Berkeley

Capstone Engineer and Researcher

Current

- Capstone project: Research and application of second-order algorithms for training of deep neural networks.
- Engineering and realization of second-order algorithms designed to significantly enhance the established first-order training methods widely used in machine learning.

Massachusetts Institute of Technology

Researcher

Spring, Summer 2018

- Worked with IBM and MIT researchers on the development of deep learning systems to curate exabytes of Earth subsystem data for the purposes of visualization and natural language querying, so that both scientists and non-scientists can gain a better understanding of the Earth's changing environment.
- Research in topic modeling, text generation, and ontology-learning, question-answering, and information retrieval.
- Built information retrieval system on top of Amazon Web Services (AWS), relying on the EC2, Elasticsearch (ES), and SageMaker services.

MathWorks, Inc.

Intern in Engineering Development, GPU Coder Team

Summer 2017

- Software engineer on small team developing GPU Coder: a MATLAB to CUDA compiler later launched in R2017b
- Designed and implemented MATLAB code directives (“pragmas”) allowing users to fine-tune the parallelization of algorithms, ultimately translating into CUDA kernel code.
- Research on benchmarking and analysis of various cutting-edge automatic parallelization techniques.
- Offered full-time position based on performance during internship.

INDEPENDENT RESEARCH & PROJECTS

- **Virtual Coach** – Developer of platform used by Harvard athletes to update their training logs automatically. Syncs data from incoming SMS messages, fitness devices, and GPS watches into a unified log using various APIs.
- **Time Calculator** – Creator of iPhone app written in Objective C, now with over 40,000 downloads on the Apple App Store. Developed for athletes to calculate with time intervals (timecalculatorapp.com).
- **Other projects** – Matrix row-reduction tool in browser-embedded C++, Music notation gesture recognition system for composers using touch screens, Level Builder for game developers creating 3D scenes.

EXTRACURRICULARS

- **Harvard University Varsity Track and Field** – Two time Ivy League Heptagonal Champion in the 4x800m relay.
- **Classical Pianist and Composer** – Winner of National Association for Music Education Young Composers (NAfME) National Competition. Finalist in ASCAP Young Composers' Competition. Trained at New England Conservatory (NEC) Preparatory School.