

# Benjamin Wagley

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## EDUCATION

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- **Colorado School of Mines** Golden, CO  
*Doctor of Philosophy, Computer Science; GPA: 3.7 (Current)* Jan. 2022 - Present
- **Colorado School of Mines** Golden, CO  
*Bachelor of Science, Major in Computer Science, Minor in Mathematical Sciences; GPA: 3.9 (Major)* Aug. 2018 - Dec. 2021
- **Yorktown High School / H-B Woodlawn Secondary Program** Arlington, VA  
*Advanced Studies Diploma; GPA: 4.14 (Weighted)* Sept. 2014 - June. 2018

## EXPERIENCE

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- **Colorado School of Mines - Department of Computer Science** Golden, CO  
*Graduate Research and Teaching Assistant* Jan 2022 - Present
  - **GPU UVM:** Ongoing research on extending GPU Unified Virtual Memory using NVMe, researching applications in Graph Neural Networks
  - **Theory of Computation Teaching Assistant:** Grading and helping students in CSCI 561 (Theory of Computation) with Dr. Neil Dantam
- **Colorado School of Mines - Department of Computer Science** Golden, CO  
*Undergraduate Research Assistant, Mines Undergraduate Research Fellow (Fall 2019)* Sept 2019 - Dec 2021
  - **GPU UVM:** Researching with Dr. Mehmet Belviranlı on extending GPU Unified Virtual Memory using Persistent Storage
  - **GPU Graph Analysis:** Researching under Dr. Bo Wu on GPU based Graph Pattern Mining
- **Henry M. Jackson Foundation** Silver Spring, MD  
*Software Engineer, Val. G Hemming Simulation Center - Virtual Medical Environment Lab* May 2019 - Dec 2020
  - **Projector Warp:** Using Computer Vision to begin development of an automatic warp map generation system for projectors to ensure that the projected image is square. (May 2020 - Dec 2020)
  - **Projector Alignment:** Using Computer Vision, HTTP connected cameras, and HTTP connected projectors to develop an automatic projector alignment server that can align two projectors to be directly on top of each other for use in 3D projection, and can align two projectors adjacent to each other so that an image can be continuously displayed across multiple screens (Summer 2019)
- **Challenging Racism** Arlington, VA  
*Website Systems Design Consultant* May 2020 - July 2020
  - **Website Design:** Assisted in design of new Challenging Racism curriculum website with Jacob Hall
- **Starmesa Solutions Inc.** Arlington, VA  
*IT Consultant* June. 2015 - Present
  - **Linux Server Management:** Installing, configuring, and managing CentOS 6&7 Servers for a wide variety of applications (KVM virtualization, Nagios, Samba, OpenVPN). Performing critical tasks such as server and data recovery.
- **Stairwell Software LLC** Arlington, VA  
*Founder, Owner, and Software Developer* Sept. 2015 - Dec. 2016
  - **Inventory Systems:** Developing and configuring a secure computer inventory system for managing company owned devices for a medium sized company.

## SKILLS

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- **Operating Systems:** Very familiar with Linux, MacOS, and Microsoft Windows.
- **Programming Languages:** Experience with C, C++, Cuda, FORTRAN, Python, PHP, R, SQL, Bash, Java, Matlab, OCaml, and Common Lisp.
- **Software Libraries:** POCO, OpenCV, libc, C++ Standard Library, MPI, openMP, SKLearn, pandas, TensorFlow, cuDF, Pytorch, DGL.
- **Computer Tools:** Google Drive, Mathematica, Photoshop, Visual Studio, CLion, GIMP, L<sup>A</sup>T<sub>E</sub>X, git, KVM, Virtual Machine Manager, PuTTY/ssh, qemu, vi/vim, emacs, SLIME, gcc/g++, gdb, valgrind, make, cmake, and VirtualBox, anaconda.
- **Languages:** Conversational fluency in German.
- **Mathematics:** Familiar with Calculus, Analysis, Linear Algebra, Differential Equations (Ordinary and Partial), Graph Theory, Set Theory, Group Theory, Probability, Statistics, Coding Theory, Computational Methods, and Proof writing.

## AWARDS

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- **CMAPP Computing Innovation Fair:** Runner Up Best Poster Award for *Flexible Prefetching on GPUs with DRAGON-DIRECT*
- **DAAD Undergraduate Research Scholarship:** Awarded DAAD Undergraduate Research Scholarship for 2020 to conduct research at the Humboldt University in Berlin (Canceled due to COVID-19 Pandemic)
- **H-B Woodlawn Math and Computer Science Scholarship:** Scholarship for excellence in Math and Computer Science from H-B Woodlawn Secondary Program.