Brian Goodell

Cambridge, MA

✉ briandalegoodell@gmail.com | ⬡ briangoodell | in brian_goodell

Experience

Senior Research Technician
FLAVELL LAB - PICOWER INSTITUTE, MIT

Cambridge, MA
July 2024 - Present

- Optimizing an existing CNN to efficiently label neurons in 3D confocal images.
  - Training and inference speedups (64 & 36x) enabled new applications.
  - Working towards a real time labeling and trace extraction pipeline.
- Designing a novel high-resolution laser temperature simulation setup.
  - Thermal accuracies of +/- 0.1 C with temporal resolution of 1 millisecond.
  - An instantly-changeable thermal environment allowing previously impossible experiments.
- Reworked a non-rigid registration network designed for nematodes to work on jellyfish.
  - High performance achieved through a custom loss and smart preprocessing.

Machine Learning Mentor
GRINNELL COLLEGE

Grinnell, IA
Jan. 2023 - May 2024

- Advised on content and helped co-run labs for a 300-level Machine Learning class.
- Communicated and explaining complex ideas to students of different levels.
- Reinforced my own understanding of the material through teaching.

Development Team Lead
STEW MAKERSPACE

Grinnell, IA
2021 - 2022, 2023 - May 2024

- Managed a team through transition, improving tangled systems and ensuring maintainable future development.
- Worked alongside my team both writing code and managing the needs of two organizations with competing requirements.

Monitor
STEW MAKERSPACE

Grinnell, IA
Jan. 2021 - May 2024

- Supervised and mentored college students in a hands-on, technical environment while ensuring shop safety.
- Maintained and troubleshot advanced manufacturing equipment and software.

Senior Interviewer
GRINNELL COLLEGE ADMISSIONS

Grinnell, IA
Aug. 2023 - May 2024

- Represented Grinnell, interviewing applicants and co-leading presentations to highlight why I loved it!

Senior Counselor
CONCORDIA LANGUAGE VILLAGES, EL LAGO DEL BOSQUE

Bemidji, MN
Summers 2020 - 2023

- Taught Spanish and managed students in a chaotic, full-immersion environment

Education

Grinnell College
BACHELOR OF ARTS WITH HONORS - COMPUTER SCIENCE AND POLITICAL SCIENCE

Grinnell, IA
May 2024

- Overall GPA: 3.9 | Computer Science GPA: 3.9   Political Science GPA: 3.9
- ΦBK | Alumni Senior Award | President's Medal Finalist

Publications

Atanas Adam A, Lu Alicia Kun-Yang, **Goodell Brian**, Kim Jungsoo, Baskoylu Saba, Kang Di, Kramer Talya S, Bueno Eric, Wan Flossie K, Cunningham Karen L, Weissbourd Brandon, Flavell Steven W (2025) *Deep Neural Networks to Register and Annotate Cells in Moving and Deforming Nervous Systems*. eLife
https://doi.org/10.7554/eLife.108159.1

Skills

Languages	Python, Julia, Java, C/C++, JS, R, Racket, MIPS
ML/HPC Tools	Pytorch, Tensorflow, Slurm
Web	Django, Vue, React, HTML, CSS, Gunicorn, Nginx
Spoken Languages	English, Spanish

Selected Course & Individual Projects

Final Project - Tank
2023
CS-213: OPERATING SYSTEMS

- Wrote a C++ multiplayer game and distributed CUDA password cracker to run in the background while playing the game.
- When presenting, we got a rate of ~100 billion SHA256 hashes per minute during a 12-player tournament.

🎥 Project and Demo Video Here

GrinSync
2024
CS-285: SOFTWARE DEVELOPMENT

- Ran the backend team on a event/socialization app, both writing core code and managing team members.
- Managed a Agile environment while ensuring good testing practices, clean code/linting, and CD/CI.

🔗 GrinSync.com

Roos Run
2023-2024
GRINNELL CROSS COUNTRY

- Set up and developed an AWS-hosted, django site from scratch, managing domain registration, content hosting, and optimization.
- Eased the transition of alums back into interaction with the team with UI & design intended to emulate the previous site.

🔗 RoosRun.com

Other Activities

Runner & Team Captain
Grinnell, IA
GRINNELL CROSS COUNTRY & TRACK AND FIELD
Jan. 2021 - May 2024

- Team leader & coordinator.
- Two school records, seven conference championships, first male athlete in school history to win Midwest Athlete of the Year.

Volunteer
Grinnell, IA
POWESHIEK ANIMAL LEAGUE SHELTER
Jan. 2023 - May 2024

- Helped around the shelter, cleaning kennels, doing laundry, and running with the dogs.
- Organized events to get the Cross Country team out on runs with our dogs.

Coleader
Grinnell, IA
GRINNELL COLLEGE - CONTRA DANCE CLUB & SWING SOCIETY
Aug. 2023 - May 2024

- Led the two largest dance student organizations on campus.
- Coordinated events and taught fellow students how to dance.