

Josh Myers-Dean

[Website](#)

[Github](#)

[Google Scholar](#)

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Boulder, CO

EDUCATION

University of Colorado, Boulder

Computer Science, Ph.D.

Advisor: *Danna Gurari*

Boulder, CO

Fall 2021 - Present

Western Washington University

Computer Science, BSc.; Mathematics Minor

Advisors: *Scott Wehrwein, Filip Jagodzinski*

Bellingham, WA

Awarded June 2021

WORK EXPERIENCE

University of Colorado, Boulder

Graduate Research Assistant

Boulder, CO

August 2021 - Present

- **Visual Question Answering:** Investigating approaches to multi-answer visual question answering as well as visual grounding.
- **Few-Shot Learning:** Examining non-meta learning based approaches to few-shot semantic segmentation.

Pacific Northwest National Laboratory

NLP Research Intern - Applied Statistics and Comp. Modeling

Richland, WA

August 2020 - September 2021

- **Speaker Diarization:** Investigating the removal of poor audio segments to improve speaker diarization metrics.
- **Information Retrieval:** Developed a simple yet effective pipeline to extract fine-grained labels for a given entity using zero-shot learning.
- **Multimodal Relationships:** Investigating the relationship between poor ASR results and audio representations (e.g. embeddings, mel spectrograms) to identify untrustworthy audio segments for downstream tasks.

Technical Intern - Biosurveillance Mobile App. Development Competition

June 2020 - August 2020

- **Unity:** Utilized Unity3D to build a training application for the Oculus Go over a 10 week period. This was a competition in which my team took first place.
- **Scrum:** Participated in daily stand up meetings as well as adhere to weekly sprints.
- **Shareholder Communication:** Held weekly presentations with both internal and external shareholders to ensure sufficient progress was being made.

Western Washington University, Computer Science Dept.

Undergraduate Research Assistant

Bellingham, WA

April 2019-June 2021

- **Computational Photography:** Using per-pixel features from deep neural networks to improve lower-level computer vision and image processing tasks such as range masking, seam carving, and graph cuts.
- **Atomic Data Analysis:** Analyzed the effect on the rigidity of a protein-ligand complex when individual atoms are removed from the ligand.
- **A/B Testing:** Created a simple web application for participants to compare label-hidden results to the baseline.

Teaching Assistant - Intro to Computer Vision, Computer Graphics

September 2020 - March 2021

- **Mentorship & Grading:** Held weekly office hours and graded exams, homeworks, and projects for both graduate and undergraduate students.

Western Washington University, Associated Students

Web Applications Developer

Bellingham, WA

April 2019 - June 2020

- **Full Stack Development:** Utilized Django, ReactJS, Docker, and Azure hosting to create responsive web applications that are used daily by students, faculty, and staff at WWU.
- **Rest API:** Created REST API's using Golang Gin for a lost and found web application while utilizing ReactJS for the client-facing side of the application.
- **Web Accessibility:** Worked within a team to ensure our web pages were accessible and compliant with WCAG 2.0 standards, as well as participate in accessibility sprints when needed. Achieved a SiteImprove score of over 98%.

PUBLICATIONS

† Denotes equal contribution

- Haley A. Wofford†, **Josh Myers-Dean**†, Brandon A. Vogel, Kevin Alexander Estrada Alamo, Frederick A. Longshore-Neate, Filip Jagodzinski, and Jeanine F. Amacher. Domain analysis and motif matcher (damm): A program to predict selectivity determinants in monosiga brevicollis pdz domains using human pdz data. *Molecules*, 26(19), 2021
- David H. Smith, Qiang Hao, Christopher D. Hundhausen, Filip Jagodzinski, **Josh Myers-Dean**, and Kira Jaeger. Towards modeling student engagement with interactive computing textbooks: An empirical study. In *Proceedings of the 52nd ACM Technical Symposium on Computer Science Education, SIGCSE '21*, page 914–920, New York, NY, USA, 2021. Association for Computing Machinery
- **Josh Myers-Dean** and Scott Wehrwein. Semantic pixel distances for image editing. In *The IEEE Conference on Computer Vision and Pattern Recognition (CVPR) Workshops*, June 2020. *Accepted for oral presentation* [Project Page](#)
- Sam Herr†, **Josh Myers-Dean**†, Hunter Read†, and Filip Jagodzinski. Petra: Drug engineering via rigidity analysis. *Molecules*, 25(6):1304, Mar 2020

AWARDS

- NSF Graduate Research Fellowship Program: Proposal Title: *Spatio-Temporal Feature Matching for Time-Varying Structure from Motion* 2021-2026
- Early Career Professional Development Fellowship: CU Boulder Computer Science - 2021
- James Lee Johnson Memorial Endowment: Western Washington University Computer Science - 2020
- Tuition Reimbursement: Pacific Northwest National Laboratory - 2020
- 1st Place - Biosurveillance Mobile App. Dev. Competition: Pacific Northwest National Laboratory - 2020
- Federal Pell Grant: 2015-2021

PRESENTATIONS

- Giving Context: Entity Classification from a Single Name: August 2021, PNNL Virtual Research Symposium
- Robust Entity Tagging in the Wild: December 2020, PNNL Virtual Research Symposium
- Semantic Pixel Distances for Image Editing: June 2020, CVPR NTIRE. [Video](#)
- Bash: Fall 2019, [Materials](#)
- Machine Learning: Fall 2019, Winter 2020, [Materials](#)
- API: Winter 2020, [Materials](#)

OUTREACH

- CU Boulder PhD Application Mentoring [Program Page](#)
- WWU Computer Science Peer Tutor [Program Page](#)
- Sunnyland Elementary School “Hour of Code” [Program Page](#)

TECHNICAL SKILLS

- **Languages:** Golang, Python, Javascript, C#, C, C++, MySQL, Java, R, Shell, Julia, L^AT_EX
- **Technologies & Frameworks:** Databricks, Docker, Git, WandB, PySpark, Linux, AWS S3, Azure Virtual Machines, PyTorch, Numpy, OpenCV, Pandas, ReactJS, Git, Transformers, Jax, Jupyter