

Josh Myers-Dean
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OBJECTIVE

To become a Ph.D. student in Computer Science and work on meaningful problems at the intersection of math and computer science.

EDUCATION

Western Washington University
Computer Science, BS; Mathematics Minor; Major GPA: 3.77

Bellingham, WA
Expected Graduation, June 2021

WORK EXPERIENCE

Pacific Northwest National Laboratory

Remote

Research Intern - Applied Statistics and Comp. Modeling

August 2020 - Present

- **Open Source Data Analytics:** Classified organization entities extracted from unstructured text via NER using a multimodal approach.
- **Collaboration:** Collaborated with senior data scientists weekly to organize sprints.

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.

Bellingham, WA

Undergraduate Research Assistant

July 2019-Present

- **Deep Learning:** 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.
- **Dimensionality Reduction:** Training a CNN to output semantically meaningful, low dimensional feature vectors for use in an array of applications.
- **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:** Constructed a web page for participants to choose the most appealing of two images from my paper on semantic pixels.
- **Data Cleaning:** Used Python libraries such as Pandas and Natural Language Toolkit (NLTK) to clean unstructured textual data and extract useful features.
- **Text Classification:** Implemented and tested various classification methods for context classification on research papers into 5 categories.

Teaching Assistant - Computer Vision

September 2020 - Present

- **Mentorship & Grading:** Held weekly office hours and graded exams, homeworks, and projects.

Western Washington University, Associated Students

Bellingham, WA

Web Applications Developer

April 2019 - June 2020

- **Test Driven Development:** Structured code around unit tests in order to achieve the most optimal solutions.
- **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%.
- **Product Recommendation:** Created a product recommendation system using Golang Gin and a personalized algorithm to suggest possible matches for lost and found items.

RESEARCH INTERESTS

- Computer Vision
- Optimization
- Computational Geometry & Topology
- Structure from Motion

PUBLICATIONS

Peer Reviewed and Accepted

- **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
- DH Smith IV, Qiang Hao, Christopher Hundhausen, Filip Jagodzinski, **Josh Myers-Dean**, and Kira Jaeger. Towards Modeling Student Engagement with Interactive Computing Textbooks: An Empirical Study *Accepted: SIGCSE 2021*

PRESENTATIONS

- Semantic Pixels: June 2020, CVPR NTIRE. [Video](#)
- Bash: Fall 2019, [Materials](#)
- Machine Learning: Fall 2019, Winter 2020, [Materials](#)
- API: Winter 2020, [Materials](#)

AWARDS

- James Lee Johnson Memorial Endowment: Western Washington University Computer Science - 2020
- Full Tuition Reimbursement: Pacific Northwest National Laboratory - 2020
- 1st Place - Biosurveillance Mobile App. Dev. Competition: Pacific Northwest National Laboratory - 2020
- Federal Pell Grant: 2015-2021
- Washington College Grant: 2015-2021

OUTREACH

- WWU Computer Science Peer Tutor [Program Page](#)
- Sunnyland Elementary School "Hour of Code" [Program Page](#)

TECHNICAL SKILLS

- **Languages:** Golang, Python, Javascript, C#, C, SQL, Java, R, Shell, Julia, L^AT_EX
- **Technologies & Frameworks:** Databricks, Docker, Git, WandB, PySpark, Linux, AWS S3, PyTorch, Numpy, OpenCV, NLTK, (Geo)Pandas, HTCondor, React, Git, PyMol, GROMACS, Tidyverse

RELEVANT COURSEWORK

Computer Graphics, Computer Vision, Bioinformatics, Limits and Infinite Series, Statistical Methods, Multivariate Calculus, Probability