

# Josh Myers-Dean

linkedin.com/in/joshmyersdean

github.com/joshmyersdean

myersdj@wwu.edu

425-280-0775

Bellingham, WA

## EDUCATION

---

- **Western Washington University**

*Computer Science, BS; Mathematics Minor; Major GPA: 3.77*

Bellingham, WA

*Expected Graduation, June 2021*

## EXPERIENCE

---

- **Pacific Northwest National Laboratory**

*Technical Intern - NLP*

Remote

*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.

- **Western Washington University, Computer Science Dept.**

*Undergraduate Research Assistant*

Bellingham, WA

*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.
- **Parameter Reduction:** Training a CNN to output semantically meaningful, low dimensional feature vectors for use in an array in applications.
- **Interdisciplinary Applications:** Work closely with Political Scientists from UPenn and Rutgers to analyze satellite and drone imagery to investigate the legibility of international borders.
- **A/B Testing:** Constructed a web page for participants to choose the most appealing of two images from my paper on seam carving.
- **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.

- **Pacific Northwest National Laboratory**

*Technical Intern - Biosurveillance Mobile App. Development Competition*

Remote

*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.
- **Mathematical Modeling:** Ported over a specific mathematical model from Python Numpy code to C# code for integration with Unity.

- **Western Washington University, Associated Students**

*Web Applications Developer*

Bellingham, WA

*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.
- **Database:** Used MariaDB database to store information for authentication, permissions, and item storage.
- **Full Stack:** Used HTML5, SCSS, and ReactJS for the client facing side of our web applications, Python Django for the back-end of the applications.

- **Western Washington University, Associated Students**

*Peer Mentor - Computer Science*

Bellingham, WA

*September 2019 - June 2020*

- **Tutoring:** Attended weekly tutoring sessions to help students further their understanding in introductory computer sciences courses including data structures, formal languages, and computer systems.
- **Teaching:** Led quarterly workshops on Bash, introductory machine learning, and API's.

## PROGRAMMING SKILLS

---

- **Languages:** Golang, Python, Javascript, C#, C, SQL, Java, R, Shell, Julia,  $\text{\LaTeX}$
- **Technologies & Frameworks:** Databricks, Docker, Git, WandB, PySpark, Linux, AWS S3, PyTorch, Numpy, OpenCV, NLTK, (Geo)Pandas, JuMP, HTCondor, React
- **Relevant Coursework:** Data Structures & Algorithms, Dynamic Programming, Linear Algebra, Multivariate Calculus, Probability, Computer Graphics, Computer Vision, Numerical Computation, Limits and Infinite Series

## RESEARCH INTERESTS

---

- Computational Photography
- Structure From Motion
- High Dimensional Parameter Reduction
- Computational Geometry and Topology

## AWARDS

---

- James Lee Johnson Memorial Endowment: Western Washington University Computer Science - 2020
- Full Tuition Reimbursement: Pacific Northwest National Laboratory - 2020
- 1<sup>st</sup> Place - Biosurveillance Mobile App. Dev. Competition: Pacific Northwest National Laboratory - 2020

## TUTORIALS

---

- Bash: Fall 2019, [Materials](#)
- Machine Learning: Fall 2019, Winter 2020, [Materials](#)
- API: Winter 2020, [Materials](#)

## 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. *Impact Factor: 3.26*

### Submitted

- 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