Josh Myers-Dean

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Education

Western Washington University — Bellingham, WA
Computer Science, BS; Mathematics Minor; ***Major GPA: 3.77*** — *Expected Graduation, June 2021*

Work Experience

Pacific Northwest National Laboratory — Richland, WA
Research Intern - Applied Statistics and Comp. Modeling — *August 2020 - Present*

- **Natural Language Processing**: Classified organization entities extracted from unstructured text using Named Entity Recognition.
- **Information Retrieval**: Developed a simple yet effective pipeline to extract fine-grained labels for a given entity.
- **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 — *April 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.
- **Data Cleaning**: Used Python libraries such as Pandas and 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 - Intro to 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.

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
- David Smith, Qiang Hao, Christopher Hundhausen, Filip Jagodzinski, **Josh Myers-Dean**, and Kira Jaeger. Towards modeling student engagement with interactive computing textbooks: An empirical study (forthcoming). In *Proceedings of the 51st ACM Technical Symposium on Computer Science Education*, SIGCSE '20, New York, NY, USA, 2020. Association for Computing Machinery

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
- 1^{st} 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, LaTeX
- **Technologies & Frameworks**: Databricks, Docker, Git, WandB, PySpark, Linux, AWS S3, PyTorch, Numpy, OpenCV, NLTK, (Geo)Pandas, HTCondor, React, Git, Tidyverse, Transformers, WebGL

Relevant Coursework

Computer Graphics, Computer Vision, Bioinformatics, Deep Learning (Winter 2021), Limits and Infinite Series, Statistical Methods, Multivariate Calculus, Probability, Multivariate Statistics (Spring 2021)