

# COLIN MIDDLETON, MS

Data  
Scientist

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## PROFESSIONAL SUMMARY

Recent Eastern Washington University graduate with an MS in Applied Mathematics. Completed thesis project on predicting likelihood of homelessness based on an individual's utility billing history. Strong background in applied mathematics and statistics with practical experience in data exploration, manipulation, analysis, and prediction. Seeking to launch career in the innovative and data rich environment of Wheelhouse.

## SKILLS

Applied Mathematics | Statistics | Machine Learning

R | Java | SQL | Jupyter Notebooks | GitHub | LaTeX

Python: pandas numpy statsmodels scikit-learn tensorflow matplotlib seaborn

## EDUCATION

Sep 2019 – Jun 2021	<b>Applied Mathematics, MS</b> <ul style="list-style-type: none"><li>• GPA: 4.0</li><li>• Total Credits: 79</li></ul>	Eastern Washington University
Sep 2013 – Dec 2017	<b>Mathematics, BS</b> <ul style="list-style-type: none"><li>• GPA: 3.5</li><li>• Minors: Honors, Chemistry</li><li>• Total Credits: 211</li></ul>	Western Washington University

## HONORS AND AWARDS

2021	<b>Outstanding Graduate</b>	Eastern Washington University
2021	<b>Graduate Service Appointment</b>	Eastern Washington University
2015	<b>Math Fellowship</b>	Western Washington University
2013	<b>Presidential Scholarship</b>	Western Washington University

## PROJECTS

Dec 2021

### Grades vs Student Characteristic

Personal Project

- Used an ANOVA test to determine if there is a significant difference in grades between groups of students where groups are based on chosen characteristic such as race or neighborhood.
- User-friendly web interface.
- Automatically performs normality and skedasticity tests.
- (Python: Streamlit)
- [https://github.com/middlec000/grades\\_vs\\_student\\_characteristic](https://github.com/middlec000/grades_vs_student_characteristic)

Jan 2021  
– Mar 2021

### Academic Paper Clustering by Topic

Big Data Analytics Class Project

- Collaborated on customized K-Means model to cluster text documents into groups by topic using bag-of-words TF-IDF representation and custom dot product distance metric.
- Custom output with intelligible group themes.
- Currently developing hierarchical (agglomerative) version for publication to PyPi.
- (Python)
- <https://github.com/middlec000/fhdc>

Jun 2020  
– Jun 2021

### Homelessness Prediction

Spokane Predictive Analytics

- Predicted risk of experiencing homelessness based on monthly customer utility payment data.
- Used Linear Regression, Logistic Regression, Cox Proportional Hazards, and LSTM models.
- Joined, filtered data and engineered new features.
- Pending publication.
- (Python + JupyterLab)
- [https://github.com/middlec000/SPA\\_predict\\_homelessness](https://github.com/middlec000/SPA_predict_homelessness)

2017

### Traffic Prediction Senior Project

Whatcom Council of Governments

- Predicted traffic flow arriving at the US / Canadian border crossing based on upflow traffic sensors.
- Employed averaging, PCA, and speed + distance ratio methods.
- (Excel)

## WORK EXPERIENCE

Oct 2018 – Current	<b>CAD Drafter</b>	<b>Brooks Middleton Architect</b>
	<ul style="list-style-type: none"><li>• Draft architectural drawings using AutoCAD LT.</li><li>• Make design adjustments and suggestions.</li><li>• Research building code and construction product specifications.</li></ul>	
Sep 2020 – Jun 2021	<b>Graduate Service Appointee</b>	<b>Eastern Washington University</b>
	<ul style="list-style-type: none"><li>• Provided feedback and suggestions to students about assignments.</li><li>• Provided feedback to professors about their students' progress.</li><li>• Taught two live remote lessons - linear algebra.</li></ul>	
Sep 2019 – Sep 2020	<b>Teachers Assistant</b>	<b>Eastern Washington University</b>
	<ul style="list-style-type: none"><li>• Provided feedback and suggestions to students about assignments.</li><li>• Provided feedback to professors about their students' progress.</li></ul>	
Nov 2018 – May 2019	<b>CAD Drafter</b>	<b>Beacon Rock Architecture Group</b>
	<ul style="list-style-type: none"><li>• Drafted architectural drawings using AutoCAD LT.</li><li>• Researched building code.</li><li>• Used Dropbox to share files.</li></ul>	
Jul 2016 – Aug 2016	<b>R &amp; D Intern</b>	<b>Energy Storage Systems</b>
	<ul style="list-style-type: none"><li>• Assisted with battery testing.</li><li>• Helped fabricate and improve a system for evaporation and dissolution of gasses in a liquid.</li></ul>	

## PUBLICATIONS

In Progress	<b><i>Prediction of Homelessness Risk Based on Utility Payment History</i></b>	<b>Eastern Washington University Thesis</b>
	<ul style="list-style-type: none"><li>• Advisor: Dr. Andrew Oster</li><li>• Paper based on Homelessness Prediction project - see Projects.</li></ul>	