

# Benjamin James Busath

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## EDUCATION:

### B.S. Applied & Computational Mathematics Emphasis

April 2021

Brigham Young University

Machine Learning Concentration

#### Notable Classes:

**Computer Science:** Deep Learning, Machine Learning, Algorithm Design and Optimization, Data Structures

**Mathematics:** Statistics, Modeling, Linear Algebra, Calc II, Calc III, Differential Equations, Analysis

**Business:** Principles of Economics

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## SKILLS:

- Python (Pandas, NumPy, Sci-Kit, PyTorch), SQL, Machine Learning, Apache Spark, Django, Deep Learning, web scraping, AWS EC2, S3, C++

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## RELEVANT EXPERIENCE:

### Research Assistant, BYU Economics Dept.

October 2018 – Present

- Contribute to the end-to-end development of machine learning pipeline for linking historical records with 89% precision and 60% recall
- Design novel feature for the census occupation field using network embeddings
- Create database schema and pipelines for storage of census records containing 100+ million rows
- Code several Python API methods for posting and extracting data to and from FamilySearch.org
- Use high-performance computing manager and Apache Spark to filter and merge large datasets of 100+ million rows

### Data Science Intern, Ancestry

June 2020 – August 2020

- Designed country specific record linking model that improved match precision by 17% and provides value to nearly ten million potential customers
- Integral member of team that won companywide hackathon competition, designed end-to-end machine learning pipeline that displayed data in a Tableau dashboard
- Worked directly with software engineering team to implement occupation feature in existing content hinting model

### Data Science Intern, Mental Gurus

October 2019 – January 2020

- Researched and develop pricing plan for recommendation engine that uses AWS Personalize
- Developed proof-of-concepts to show investors, report directly to CEO and other internal team leaders

### Personal Projects

- Created an ensemble machine learning model utilizing sci-kit pipelines that classified income, AUC Score: 0.7859, F1 Score: 0.6855, Accuracy: 0.8639
- Created personal website that utilized Django framework and AWS services

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## CAMPUS INVOLVEMENT:

### BYU Data Science Club, Vice President

December 2018 – Present

- Design and teach training curriculum, engage with students for growing club of 200+ members
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