

# BRANDON E. DAVIS

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## EDUCATION

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Post-baccalaureate Fellowship in **Cognitive Science/Machine Learning** 2019 - 2022  
*Massachusetts Institute of Technology (MIT)*  
*Eugene Stark Fellowship Awardee*

Bachelor of Arts in **Cognitive Neuroscience** 2015 - 2019  
*Washington University in St. Louis (WUSTL)*  
*Amgen Scholarship Awardee*

## MACHINE LEARNING: WORK EXPERIENCE

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### MultiPlan Inc.

#### Data Scientist I

May 2022 – present

- *Natural Language Processing Product:* Trained a Named Entity Recognition model to automatically extract essential elements for billing negotiations between healthcare insurers and providers.
  - Outcome: Deployed an internally-consumed model that has generated a 9.3 x speedup in the payment process during negotiations.
- *Text Extraction ML Product:* Trained an ML model to automatically format large medical bills so that business could analyze errors in billing.
  - Outcome: Model has brought on 4 new clients to the company. Gained company-wide recognition through rewards programs once the models were deployed.
- *Product Classification ML Product:* Lead developer on a gradient-boosted decision tree model that predicts likelihood of client satisfaction with a certain insurance pricing product.
  - Outcome: This model is now part of a trademarked solution being used for almost all of MultiPlan's clients as a part of a product suite that is projected to bring in millions in revenue FY 2024, and as of Q4 2023, is MultiPlan's biggest machine learning product offering.

### Microsoft Inc.

#### Machine Learning Researcher

Summer 2021

- *Reinforcement Learning Project:* Coded Q-learning, Value Iteration, and the Successor Representation RL algorithms and 10 gridworld environments in order to compare human and AI spatial navigation.
  - Outcome: Paper accepted to the The Multidisciplinary Conference on Reinforcement Learning and Decision Making in 2022

### National Human Genome Research Institute

#### Assistant Researcher

Summer 2017

- *Facial Analysis ML Paper:* Collected facial data from ethnically diverse populations to train a facial recognition ML product to detect physical manifestations of Cornelia de Lange Syndrome, an understudied rare disease whose detection typically relies on costly genetic testing.
  - Outcome: Paper in the American Journal of Medical Genetics detailing the disease and current advances in therapeutics and patient outcomes.

## MACHINE LEARNING: COURSEWORK

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**MIT:** Computational Cognitive Science (9.660), Introduction to Machine Learning (6.036), Research in Brain & Cognitive Sciences (9.50)

**WUSTL:** Introduction to Computer Science, Calculus I, Calculus II, Physics of the Brain (differential equations)

## MACHINE LEARNING: TECHNICAL SKILLS

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**Coding Languages:** Python (Scikit-Learn, Pandas, LightGBM, Pytorch, spaCy, Matplotlib), R, and SQL

**MLOps:** AWS, Parquet, MLFlow, Ray Snowflake, Domino Data Labs, Docker, API Testing, Model Deployment