

## Zach Johnson

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### Education

#### NORTH DAKOTA STATE UNIVERSITY

Fargo, ND

BS Economics (Minor: Computer Science). GPA: 3.85 (Magna Cum Laude)

2019-2022

- Quantitative program emphasized mathematical, statistical, and computational applications of economics
- NDSU Presidential scholarship; Mildred Larson Scholarship; Agribusiness and Applied Economics Scholarship; WFEA Scholarship; Challey Institute Scholarship; NDSU Men's Track Scholarship; recipient of 3M stipend for research in the Grand Challenge Scholars Program; All graduate study fully funded

MS Applied Economics (GPA: 3.90)

2022-2023

- Thesis (published): *The Market as a Distributed Genetic Algorithm: A Comparison of Neoclassical Optimizing Agents to Heuristic-Based, genetic Agents*
- Presented an alternate, computational theory of the market consisting of heuristic, genetic agents
- Courses: advanced microeconomic theory, linear programming, advanced econometrics (time series)

MS Computer Science (GPA: 4.00)

2022-2024

- Thesis (in progress): *Network Traversal Using Deep Learning*
- Courses: Artificial intelligence, advanced data mining (neural networks), database systems, cloud computing, mathematical statistics 1 & 2, statistical machine learning, modern software development, algorithm analysis

### Experience

#### BLUE CROSS BLUE SHIELD OF NORTH DAKOTA

Fargo, ND

##### Data Analytics Intern

Jun 2022 – Aug 2022

- Worked with developers and analysts to provide enterprise data analytics and solutions to stakeholders
- Saved FTE hours through automation of manual processes using Windows PowerShell scripting
- Analyzed and presented to large committee on a statistical comparison of current and prospective risk scores to be used in BCBSND's Value-Based Care program
- Created data validation methods to screen for faulty data coming from developing data warehouse
- Spearheaded integration of Python into enterprise use for data science, data validation, and process automation
- Presented projects to Data Analytics team and other large committees on multiple occasions

#### NORTH DAKOTA STATE UNIVERSITY

Fargo, ND

##### Department of Agribusiness and Applied Economics Graduate Research Assistant

2022-2023

- Advisor: Dr. Jim Caton
- Book chapters: *Probability Distributions, Hypothesis Testing for Learn Python for Statistics and Economics*
- Teaching assistant, ECON411: Computational Economics; lecture, *hypothesis testing*
- Publication: *The Market as a Distributed Genetic Algorithm*

##### Department of Computer Science Graduate Research Assistant

Fargo, ND

- Advisor: Dr. Jeremy Straub
- Used machine learning and deep learning techniques in classified Department of Defense projects

### Leadership & Activities

#### NDSU MENS TRACK AND FIELD/CROSS COUNTRY

- Division 1 cross country and track athlete (5000m, 10000m, 10k XC)
- 4 time all conference (2023 (3), 2020), top 10 in school history in 4 events: 5000m (indoors), 5000m (outdoors), 10000m, 10k (XC); highest finish at conference XC meet in NDSU's division 1 era (3<sup>rd</sup>)
- Nominated for NDSU male athlete of the year (2023-2024) as one of 6 nominees

### Skills & Interests

**Software:** Python, Tensorflow, Keras, Java, C#, SQL, PostgreSQL, Excel, PowerShell, Tableau, STATA, GAMS

**Applications:** statistical modeling, agent-based models, data visualization, data science, computational economics, linear programming, time-series analysis

### References or Writing Samples

- Available upon request