

# Parker Carlson

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## Education

### Oregon State University

September 2019 – June 2023

Honors Bachelor of Science, Computer Science.  
3.98 GPA, 1 peer-reviewed publication.

## Experience

### Data Science Intern

June 2022 – December 2022

#### Micro Systems Engineering, Inc.

- Constructing TIBCO Spotfire dashboards to provide analytics and visual quality assurance of manufacturing processes
- Reduced manual data examination during root cause failure analysis by 95% using data mining techniques
- Integrating TIBCO Data Virtualization, Spotfire, and Statistica to analyze data and identify abnormal test results
- Presented analytic-enabled dashboards to 20 employees, including 5 department heads

### Data Science Intern

June 2021 – August 2021

#### Viewpoint, a Trimble Company

- Created interactive Domo charts featured in Viewpoint's Executive Quarterly Business Review to inform market decisions
- Forecasted spending in the construction industry using time-series analysis and machine learning techniques
- Optimized frequent SQL queries to reduce length by 64% and execute over 300% faster

### Research Assistant

June 2020 – August 2020

#### Soundbendor Lab

- Designed and implemented a library for efficient data processing and loading into Tensorflow, used by 10 lab members
- Developed technical tutorials for audio-based machine learning and Slurm used by over 15 lab members
- Analyzed and debugged various deep learning models. Implemented solutions in Tensorflow, Pandas, and SK-Learn
- Explained audio deep learning visually with custom graphics created in Adobe After Effects

## Projects

### Audio Transposition

November 2019 – Present

#### Soundbendor Lab

- Designed deep neural networks to transpose time-domain audio while preserving timbre using Tensorflow.
- Conducted hundreds of machine learning experiments using Tensorflow, Slurm, and Neptune.ai
- Published as 2<sup>nd</sup>-author at EvoMUSART 2023 for work on applying deep learning to audio transposition
- Awarded 2nd Place Industry's Choice Award at 2020 OSU Engineering Virtual Showcase. Chosen out of 200 projects

### Statistical Analysis of Mood

June 2020 – June 2021

- Analyzed and predicted my daily mood using data science and machine learning techniques
- Cleaned data, selected features, and forecasted daily mood based on tracked personal data

### Japanese Character Recognition

September 2017 – June 2021

- Explored few-shot learning with neural networks to improve recognition of handwritten Japanese characters
- Augmented available handwritten character data using generative adversarial networks
- Awarded "Best in Computer Science" and "Outstanding Science Project" at 2018 and 2019 local ISEF events, respectively

## Relevant Coursework

**Machine Learning and Data Mining:** Application of modern data cleaning and machine learning techniques, including deep learning; Pandas, SK-Learn, Matplotlib, Tensorflow

**Parallel Programming:** Theory and applications of parallel programming; OpenMP, SIMD, Caching, CUDA, OpenCL, MPI

**Methods and Models of Applied Mathematics:** Exploration of discrete and continuous models and methods for analysis; linear programming, non-linear optimization, least-squares, orthogonal polynomials, Fourier coefficients

## Skills

**Communication:** Led teams of 5+ both in-person and remote, presented to small (2-20) and large (100+) groups

**Languages:** English (native), French (DELF B2)