BRIAN COOPER

BS Computer Science, University of Minnesota

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EXPERIENCE

Research Assistant (Remote, Current)
Minnesota Population Center | December 2019 - Present

Implemented various geospatial algorithms for the Minnesota Population Center such as Geographic Self-Organizing Maps (GeoSOM), Average Isoperimetric Quotient (ISO Q), and Akaike Information Criterion (AIC). Combined use of MATLAB, R, Python, and Jupyter with various statistical and machine learning libraries.

Interactive Visualization Designer (Remote, Current)
University of Minnesota | June 2019 - Present

Developed interactive visualizations and games for lessons that teach STEM concepts under National Science Foundation's *Hour of Cyberinfrastructure* project (Award Abstract #1829708) using JavaScript and D3.js. Wrote Python scripts and code to augment the lessons. Integrated visualizations into Jupyter Notebooks with various UI/UX extensions and modifications. Created SVG components for use in lessons with Adobe Illustrator.

Research Assistant (Remote)
Griffin Lab - Dendrology | December 2019

Created convolutional neural networks for feature extraction and classification from high-resolution dendrological imagery (wooded plants), such as tree cell separation, cell wall width, and interspecies discrepancies. Used various imaging and anomaly detection techniques, such as Sobel filtering and Canny edge detection. Implementations used scikit-learn and OpenCV for prototypes, with TensorFlow and Keras for formal deep learning model construction.

Cash Control Team Lead
Valleyfair Amusement Park | April 2018 - September 2018

Supervised the cash control team at Valleyfair. Balanced park vault and regulated employee cash bags. Maintained accounting spreadsheets for various park divisions. Performed daily cash recycler pickup and balanced checks sent to the park.

Graphic Designer (Remote)
Colorado State University | September 2017 - March 2018

Created various visual media for Off-Campus Life at Colorado State University, including posters, brochures, and digital media in an effort to inform students and faculty about Off-Campus Life programs. Extensive use of Adobe Suite: particularly Photoshop, Illustrator, InDesign, and Premiere.

EDUCATION

University of Minnesota - BS Computer Science
Fall 2018 - Fall 2019 (graduated December 2019)

- Emphasis: Artificial Intelligence, Bioinformatics
- International Collegiate Programming Contest, Association for Computing Machinery, Cryptocurrency Club, Environmental Student Association

Normandale Community College - AS Computer Science
Fall 2016 - Spring 2018 (graduated May 2018)

SKILLS

- **Languages/APIs:** Python, C++, C#, JavaScript, TypeScript, SQL, OpenGL
- **Web:** React, Redux, Django, WebGL, HTML, CSS, SASS
- **AI:** TensorFlow, Keras, scikit-learn
- **Software:** Photoshop, Illustrator, Premiere, InDesign, After Effects, Blender, Unity, Godot