# BEN BROWN

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## OBJECTIVE

Passionately motivated electrical engineer seeking full-time, fast-paced, cross-disciplinary work combining Electrical Engineering, Artificial Intelligence, Applied Statistics and Ethics in a research setting.
**Available post-graduation in May 2024**

## EDUCATION

**BS Electrical Engineering**, Rochester Institute of Technology — Expected 2024
**Applied Statistics Immersion**, Rochester Institute of Technology — Expected 2024
**GPA:** 3.08

## SKILLS

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|---|---|
| **Software** | Python, C/C++, PyTorch, Linux, Java, Assembly (MSP430), MATLAB, LaTeX |
| **Hardware** | Verilog/VHDL, Circuit Analysis (AC/DC), SMT/THT Soldering, Semiconductor Processes |

## EXPERIENCE

**Research Assistant | *Cybersecurity*** — Aug 2023 - Dec 2023
DeFake Project — *Rochester, NY*

- Wrote scalable, modular **PyTorch** framework for variable-scale testing of **DeepFake detection** algorithms to investigate the security of visual media
- Collected data on several adversarial attacks for DeepFake detectors and generators to determine vulnerabilities in common deepfake detection architectures
- Participated in team reading groups about Artificial Intelligence and Cybersecurity

**Electrical Intern | *Defense*** — Jan 2023 - Aug 2023
L3Harris Technologies — *Rochester, NY*

- Produced largest hardware prototyping run seen by sector in record time in a non-production facility
- Wrote complete **Python** test suite to automate hardware checks after testing, increasing efficiency by 57%
- Wrote procedures, **Python/C/C++**, and reports for small scale testing
- Used oscilloscopes, multimeters, and soldering to debug and repair failing units

**Electrical Intern (ML/AI) | *Titanium Production*** — Jan 2022 - Aug 2022
TIMET Morgantown — *Morgantown, PA*

- Collaborated with several groups in producing technology that simultaneously simplifies operator's jobs, and potentially saves the company seven figures annually
- Employed several Time Series prediction technologies, including fundamentals **(RNN, LSTM, GRU)** and state of the art **(SCINet, FEDformer)** to estimate chemical profile of furnace contents and ensure melt quality
- Advocated for ethical implementation of technological tools to prevent reckless worker displacement
- Designed custom genetic algorithm to optimize **XGBoost** hyperparameters in production use

## PROJECTS

**Spectral Sensor Integration - Capstone Project:** Lead small, high performance team of students to design, manufacture, and produce a fast, high accuracy system for detecting light on the SWIR spectrum.

**TrackmaniaRL - EEEE-547 Final Project:** Created Neural Network based RL agent in **PyTorch** that worked within a TrackMania 2020 gym enviornment with a continuous action space. Tasked with completing a test track using reward engineering, and tuning hyperparameters of A2C.