Shoham Weiss

PhD Applicant · Machine Learning

2111 Emerald Dr, Champaign, IL 61822

shohamweiss@gmail.com | shohamweiss.github.io | github.com/ShohamWeiss | linkedin.com/in/shohamweiss

Education

University of Illinois at Urbana Champaign *Urbana-Champaign, Illinois*

BS Engineering Physics with Computer Science minor *2016 - 2020*

- Graduated with Highest Honors
- Deans List
- GPA: 3.83, Major GPA: 3.86

Skills

Machine Learning: TensorFlow, ML.NET, AWS Machine Learning Services

Computer Languages: Python, C#, C & C++, Java, LaTeX, SQL, HTML, CSS, JavaScript, Bootstrap, jQuery, PHP

Database: MySQL, MariaDB, PostgreSQL, SQL Server

Software: LabVIEW, Origin, Root, AutoCAD, FreeCAD, SolidWorks, Office

Hardware: IOT devices (Arduino and Raspberry Pi), analog and digital breakout boards, lab controllers and sensors

IDE: Google Colab, Jupyter Notebook, Visual Studio, Atom, Spyder, Arduino.ide, Eclipse, Geany, Android Studio

OS: Windows, Linux

Languages: English (Fluent), Hebrew (Fluent), French (Proficient)

Project Experience

Machine Learning for Hand Gesture Prediction *Champaign, Illinois*

Self-driven Project *2020 - Present*

- Created a convolutional neural network for determining which direction a finger is being pointed using TensorFlow
- Researched image localization and image segmentation techniques
- Created a moving window localization algorithm
- Utilized TensorFlow Lite to integrate model onto Raspberry Pi

Property Management Blazor Web Application *Champaign, Illinois*

CoralOnyx Real Estate LLC *2020 - Present*

- Engineered a machine learning model for transaction classification, reducing time inserting data by 80%
- Designed production quality features for inserting sensitive data in C#/Blazor
- Managed the project with Git for version control and Continuous Integration Continuous Deployment

Stock Market Prediction Using Machine Learning *Champaign, Illinois*

Self-driven Project *2019 - Present*

- Programmed an interactive simulation of the stock market for multi-bot transactions
- Utilized .NET machine learning tools to create fast forest binary and regression machine learning models
- Simulated the stock market with bots using the models, achieving 12% increase in bot cash

Neural Network Architecture *Urbana-Champaign, Illinois*

Physics 498: Computational Physics *2019 - 2020*

- Constructed a Hopfield Neural Network from scratch in C#
- Constructed a Restricted Boltzmann Machine Neural Network from scratch in C#
- Researched the theory behind a variety of Neural Networks, including back propagation, and shallow Neural Net

Quantum Computing *Urbana-Champaign, Illinois*

Physics 498: Computational Physics *2019 - 2020*

- Researched the theory behind quantum computers and quantum circuits at a college level
- Constructed a fully functioning quantum computer simulator from scratch in Python
- Beat classical computer's factoring speed using Shor's algorithm on the quantum computer simulation

Wind Turbine Low Frequency Noise Research *Urbana-Champaign, Illinois*

Physics 398: Senior Project *2019 - 2020*

- Constructed an Arduino controlled PCB to measure noise and pressure profiles in the vicinity of wind turbines
- Created new classes wrapping open source Arduino classes in C & C++ for specialized use
- Programmed new python data analysis tools, including Fourier analysis, spectrograms, heatmaps, and 3D graphs

Car Dashboard Camera Using Machine Learning *Urbana-Champaign, Illinois*

Computer Science 498: Internet of Things *2019 - 2019*

- Built a dashboard and rear camera using a Raspberry Pi and Arduino
- Utilized TensorFlow Lite to run the SSD model on the Raspberry Pi for real time object classification

Heart Rate Monitor Using Cloud Machine Learning *Urbana-Champaign, Illinois*

Computer Science 498: Internet of Things *2019 - 2019*

- Constructed AWS cloud infrastructure to run machine learning algorithms on smartwatch heart rate data

Raspberry Pi Doorlock *Urbana-Champaign, Illinois*

Computer Science 498: Internet of Things *2019 - 2019*

- Designed and 3D printed a model to fit on an apartment bolt lock, controlling the bolt lock with a servo motor
- Programmed the front-end and back-end of an apache2 web server running on the Raspberry Pi

Spotify Music Suggestion App *Urbana-Champaign, Illinois*

Computer Science 411: Database Systems *2018 - 2019*

- Developed a user-friendly Spotify music suggestion Django website using PostgreSQL, python, HTML, CSS, and JavaScript

Research Experience

University of Illinois at Urbana-Champaign - Dept of Nuclear Physics *Urbana-Champaign, IL*

Experimental research and development for the next generation Enriched Xenon Observatory *2018 - 2020*

- Effectively collected and analyzed test findings and results
- Presented results at the 2019 Division of Nuclear Physics conference in Arlington, VA
- Led and mentored new members, improving lab methods and efficiency

University of Illinois at Urbana-Champaign - Dept of Chaos Physics *Urbana-Champaign, IL*

Experimental research, funded by NASA, of the long distance wireless transfer of energy *2017 - 2018*

- Collected and analyzed experimental heat measurement data
- Solved and documented theoretical problems in LaTeX

Professional Experience

Registered Math and Physics Tutor *Champaign, Illinois*

University of Illinois at Urbana-Champaign *2017 - 2019*

Provided personalized help for students struggling with college-level Math and Physics. Obtained a revised deep understanding of different concepts. Devised multiple ways for explaining and presenting the material effectively.

Customer Experience Representative *Champaign, Illinois*

Bedloft.com *2018 - 2018*

Provided superior customer service and work quality while demonstrating diligence, flexibility, and innovation in resolving problems.

Lifeguard *Champaign, Illinois*

Stephen Family YMCA *2014 - 2015*

Trained in CPR and emergency response. Instructed new lifeguards.

Extracurricular

2019	**Young Scholars**, Mentored a high school student in assisting with research in a Nuclear Physics Lab
2017-2018	**American Institute of Aeronautics and Astronautics**, Chair of Rocket Races for Engineering Open House
2017-2018	**Lincoln Avenue Residence**, Hall Council Vice President
2016-2020	**Intramural Soccer**, Played in biweekly soccer games