ANTHONY TOPPER

781.697.5494

hello@anthonytopper.com
www.linkedin.com/in/anthonytopper
www.github.com/anthonytopper

EDUCATION

Worcester Polytechnic Institute   Graduated May 2021
Data Science M.S. & Computer Science B.S.
AI, Machine Learning, Networking, Databases, Linear Algebra

Advanced Math and Science Academy, Marlboro, MA   2009 – 2016
AP Scholar with Honor

Rivers School Conservatory of Music, Weston MA   2009 – Present
(Piano study 14 years; music composition 10 years)
Frances Brockman Lanier Award, for Greatest Overall Musical Achievement in the conservatory, 2016
David Beyer Piano Scholarship Award 2014

PROFESSIONAL EXPERIENCE

Lead Software Developer at TruCommish (trucommish.com)   Summer 2021 – Present
FinTech solution for tracking variable compensation
- Designed and developed a complete web application with NextJS
- Deployed on Vercel with automated testing and CI/CD pipeline
- Built a highly differentiated and intuitive user interface through iterative UX testing/interviews
- Provides unique reporting not found in any other enterprise commission tracking tools

Co-Founder of Songalong (songalong.live)   Summer 2020 – Present
Online music collaboration service used in Emmy Award winning productions
- Architected and developed a full-stack SaaS application in React
- Managed DevOps using a continuous delivery pipeline
- Designed marketing collateral to advertise on multiple social media platforms
- Scaled AWS infrastructure to support thousands of active users

Networking Software Engineer   Summer 2019
Juniper Networks (www.juniper.net)
- Designed and implemented high-scale network entity simulation engine for testing cloud software
- Improved performance of subscriber management DHCP resolution system

Robotics and Machine Learning Researcher   September 2018 – May 2019
Research publication at WPI (https://digitalcommons.wpi.edu/mqp-all/7087/)
- Designed recurrent neural network to analyze audio signal information and interpret musical input
- Implemented data analysis using TensorFlow with Keras API in Python
- Built Arduino controller software for a piano-playing robotic arm

Robotics Cloud Engineer   Summer 2017 & Summer 2018
iRobot (www.irobot.com)
- Implemented location detection system with machine learning in Python using scikit-learn using 2.4GHz wireless signal interference to localize people in a room
- Optimized signal parameters with Simulated Annealing to minimize erroneous signal classification
- Analyzed and presented wireless mesh signal information using SciPy and Matplotlib in Jupyter notebook
- Integrated IoT devices using MQTT with Raspberry PI broker and Hass.io controller

Mobile Research and Machine Learning Developer   September 2016 – May 2017
Research position at Worcester Polytechnic Institute
- Built Android mobile application in Java to alert users if they are too drunk to drive
- Implemented application using stochastic DSP and a frequency-domain SVM to determine blood alcohol level using phone's time-series accelerometer data

Co-Founder and Board Member at MetroHacks (metrohacks.org)   January 2016 – Present
Largest High School Hackathon on the East Coast
- Co-founded registered charity hackathon event, three years running
- Organized hackathon for 350+ students, including directing logistics and raising $20k+ in sponsorships
- Implemented user registration portal and project judging system on autoscaled AWS EC2 cluster

Coauthored Research Paper in IEEE Journal   Summer 2015
- Implemented application for Android phones to prevent unwanted password detection
- Performed original research to discover the efficacy of k-means clustering to visually snoop a phone's passcode
- Researched efficacy of facial recognition on Android in Java with OpenCV using PCA on Eigenfaces

Internship   Summer 2014
Mobiquity, Inc. (www.mobiquityinc.com)
- Designed custom security framework using OpenSSL for authentication with X.509 certificates
- Gave company-wide demo of app that tracks locations of users with RSSI data from multiple BLE iBeacons
- Authored Google Glass application in Java for retail marketing following Agile Development
- Authored mobile financial software with Xamarin frontend and Node with MySQL on AWS backend
- Ported company demo app from Android in Java to iOS in Objective-C

PERSONAL PROJECTS

Squadlet (squadlet.com)   September 2018
- Designed full-stack MEAN web application using autoscaling AWS backend with 200+ users
- Integrated 3rd party federated OAuth login with Facebook, and local MongoDB for users
- Built real-time schedule synchronization protocol using SocketIO with session relay based on MSRP

FINRA 1st Place Winner out of 170 teams at PennApps XIV   September 2016
(devpost.com/software/today-in-history-w43dx0)
- Performed NLP in Python using TF-IDF to classify historic articles with Naive Bayes
- Integrated with Amazon Alexa API for speech recognition and responses
- Backend NodeJS Express API to parse and scrape 3rd-party web sources for historic information

2nd Place out of 60 teams at MIT Blueprint Hackathon ([bit.ly/29u3Kb5](bit.ly/29u3Kb5))   February 2016
- Developed 3D AirMouse - to control a computer cursor from phone like a laser-pointer
- Built custom Bluetooth protocol with Multipeer Connectivity framework to transfer gyroscope info

Winner of Best Use of Comcast API out of 173 teams at PennApps XIII   January 2016
(devpost.com/software/blocks-of-sugar)
- Performed unsupervised machine learning using hierarchical clustering written in R with Beaker Notebook
- Implemented backend Node server to pull from Johnson & Johnson A1C dataset in real time

SKILLS

- Python (TensorFlow, NumPY, Scikit-learn, SciPy, Matplotlib), Javascript (Node, Express, Meteor), MySQL, C/C++, HTML/CSS, Java, Objective-C
- AWS, Docker, *nix, Git, Jupyter, Weka, MATLAB, MEAN, LAMP
- SEO, Agile Development, DevOps, CI/CD, UI Design (Photoshop, Illustrator)