alowey111@gmail.com
(516) 695-6306

AUSTIN M. LOWEY

Jersey City, NJ
US Citizen

EDUCATION

Carnegie Mellon School of Computer Science, Pittsburgh, PA
- Machine Learning: Fundamentals and Algorithms Course — Sep 2023
- Artificial Intelligence Course — July 2023
- Programming with Python (for AI/ML) Course — Apr 2023

Stevens Institute of Technology, Hoboken, NJ
- **Master of Engineering** in Mechanical Engineering, **GPA: 3.89** — May 2019
  - Master's coursework in Python, product development, advanced math and modeling, systems integration engineering, and engineering project management.
- **Bachelor of Engineering** in Mechanical Engineering, **GPA: 3.92** — May 2019

Other Credentials
- UPenn Certificate in Leadership Dynamics — Dec 2022
- Lean Six Sigma Green Belt Certification — Aug 2023

TECHNICAL SKILLS

Languages: Python (pandas, NumPy, OpenCV, scikit-learn, TensorFlow Lite, PyQt, Matplotlib, Plotly, rospy, Beautiful Soup, psycopg2), SQL (PostgreSQL, pgAdmin), HTML/CSS, MATLAB, C++

Other: Version Control (Git, GitHub, GitLab), Agile, Docker, REST APIs, Unit Testing, ROS, AI, Machine Learning, Computer Vision, 2D & 3D Computer-Aided Design (Creo, SolidWorks, AutoCAD), 3D Printing

FEATURED PERSONAL PROJECT

Personalized Spotify Festival Playlist Generator (Python, HTML/CSS)
Project Investment: 200+ hours
https://github.com/AustinLowey/SpotifyFestivalPlaylistGenerator

Link to Demo Video & Full Documentation:

- Enhances Spotify playlist experience with exclusive customization and generation features not available on the Spotify platform
- Creates a Spotify playlist using top tracks from the lineup of a user-inputted music festival
- Scrapes and extracts the specific music festival's artist lineup (Beautiful Soup)
- Guides user with a series of UI screens, facilitating artist selection from the imported festival lineup and providing playlist-customization options (PyQt, pandas, Spotify Web API)
- Retrieves metadata for artists' top tracks for new-playlist creation (pandas, Spotify Web API)
- Delivers automated track feature analytics using metadata and by providing user with a playlist summary dashboard (HTML/CSS, pandas, Plotly)

ENGINEERING EMPLOYMENT (PART 1)

Software Engineer, US Army, Picatinny Arsenal, NJ — **Nov 2021 – Present**
Security Clearance: Secret (Civilian)

- Developed distributed algorithms in Python to drive autonomous UAV swarm coordination, tailoring swarm behaviors to meet customer-driven mission requirements, in a dynamic, Agile development environment
- Led the creation of a modular computer vision and target recognition Python framework, enhancing UAV decision-making and navigation with integrated cameras (Numpy, OpenCV, rospy, TensorFlow Lite)
- Collaborated with stakeholders to gather and manage requirements, plan program activities, coordinate tests with quality engineers, and ensure alignment with project goals throughout the SDLC
- Automated collaborative UAV swarm performance analysis using Python, providing graphical insights and malfunction flagging to aid during live-flight testing and debugging (pandas)
- Implemented Python data logging software for recording UAV swarm flight and diagnostic data to support Formal Qualification Testing requirements (pandas, rospy, logging)
- Implemented unit testing to minimize regressions and ensure code quality, reliability, and scalability
- Utilized containerization to facilitate software deployment onto UAVs in a Linux environment (Docker)
- Engineered hyperparameter tuning, data extraction, and analytics using Python for deep reinforcement learning research project, improving autonomous UAV swarm search time by 7% (pandas, Matplotlib)

ENGINEERING EMPLOYMENT (PART 2)

Deputy Engineering Team Lead, US Army, Picatinny Arsenal, NJ **Dec 2019 – Nov 2021**

- Deputy program lead over an interdisciplinary team of 27 engineers, managing engineering activities for an interservice $185 million novel mortar munition program that received 3 team awards in 2 years
- Delegated program action items to other engineers, ran weekly action item status update meetings, and led technical discussions in pursuit of various program goals during progression of munition's life cycle
- Led entire program as acting team lead during leadership transition period and received an award for accelerating critical-path activity completion by 12 weeks and leading to successful product qualification
- Led a multi-year root cause analysis project, improving a testing procedure and saving $430,000
- Planned and coordinated execution of program's $3.4 million successful qualification testing series
- Coordinated engineering analysis of munition system's performance metrics in several technical areas
- Delivered technical briefings to senior leadership and customers
- Managed program schedule using MS Project and led formal risk review and mitigation meetings
- Coordinated production, quality, lot acceptance testing, and logistics activities for $9.1 million of assets

Systems Integration Engineer, US Army, Picatinny Arsenal, NJ **Sep 2019 – Dec 2019**

- Collaborated on system requirements with stakeholders and coordinated technical actions across an Integrated Product Team on a novel mortar munition to ensure stakeholder needs were met
- Designed Creo CAD models using DFMA and GD&T principles and 3D printed proofs of concepts
- Maintained technical drawings and documentation and coordinated Engineering Change Proposals

Product Design Engineer (Co-op), Edgewell Personal Care, Allendale, NJ **Aug 2017 – Dec 2017**

- 3D printed prototypes and created Creo CAD parts, assemblies, and drawings for consumer products

Product Development Engineer (Co-op), Fisher-Price, New York, NY **Jan 2017 – May 2017**

- Developed cost-reduction options for early toy design concepts while managing cross-functional team member needs and incorporating DFMA engineering design principles to optimize user experience
- 3D modeled toy parts and mechanisms using SolidWorks and 3D printed design prototypes

Environmental Engineer (Co-op), AKRF, New York, NY **Sep 2015 – Dec 2015**

- Oversaw environmental drilling contractors to ensure each drilling site complied with safety standards
- Logged field results using Excel and AutoCAD to support bioswale design

RESEARCH PUBLICATIONS

- Reinforcement Learning for Collaborative Search and Rescue Using UAS Swarms, Publisher: IEEE (2022)
- Autonomous UAV Swarm Flight Logging and Automated Data Analytics and Visualization Using Pandas and Rospy Logging, Publisher: DTIC (2023)

PROFESSIONAL AWARDS

- 2023 Excellence Award for Leading Software Qualification Testing for a High-Priority UAS Swarm Behavior
- 2022 Certificate of Appreciation for Exceptional Leadership and Initiative as Acting Team Lead
- 2022 Team Excellence Award for Full Materiel Release of Novel Munition Capability
- 2021 Integrated Product Team of the Year, Honorable Mention
- 2021 Test and Evaluation Team of the Year for Solving Critical-Path Root Cause Analysis

OTHER LEADERSHIP EXPERIENCE AND HONOR SOCIETIES

- Eagle Scout
- Resident Assistant (2015 – 2018)
- Teaching Assistant for Stevens Graduate Course (2017 – 2019)
- Vice President, Stevens Entertainment Committee (2016 – 2017)
- Academic Chair, Sigma Phi Epsilon Fraternity (2017 – 2019)
- Gear and Triangle Leadership Honor Society
- Tau Beta Pi Engineering Honor Society