RYAN ANDREW TONER

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EDUCATION

Fairfield University, Fairfield, CT — Graduated May 2021

- **Bachelor of Science,** Computer Science & Mathematics - Major GPA: 4.00

WORK EXPERIENCE

Raytheon Missiles & Defense Software Engineering Center Intern — Summer 2020

- Embedded systems programming with C++ and Ada. Created simulation software with Qt to support interface testing.

Servo-Robot Artificial Intelligence Research Assistant — September 2019-May 2021

- Researcher at Fairfield University AI Research Lab with SERVO-ROBOT
- Constructed neural networks for industrial welding classification
- Created novel techniques for data processing and analysis
- Collaboratively developed human-machine interface with AngularJS

Fairfield University Engineering Technical Assistant & Entrepreneur — July 2019-May 2020

- Collaborator with Professor Douglas Lyon for CTNext innovation grant-funded tech products
- Created RFLeo, a thumb-sized Arduino Leonardo nRF24l01-based transceiver and USB peripheral device
- Created wireless, low-latency, and cross-platform microcontroller arcade gamepad for MAME using RFLeo
- Designed PCBs using Autodesk Eagle and created radio software using C++

Federal Aviation Administration Student Researcher — 2016-17

- Presenter, 36th Annual Digital Avionics Systems Conference (DASC), St. Petersburg, FL
- C. Yao, A. Rusu, A. Danick, R. Hingorani and R. Toner, "Aircraft conflict resolution cataloguer," 2017 IEEE/AIAA 36th Digital Avionics Systems Conference (DASC), St. Petersburg, FL, 2017, pp. 1-10, DOI: 10.1109/DASC.2017.8102101
- Collaborative research and software development, managing databases, algorithm creation and implementation

Personal Research Data Science and Mathematics — 2018-Present

- Applied neural networks and pathfinding to solve the NP-hard 15 puzzle
- Working on paper for *Efficient Graph Minor Verification*
- Currently investigating Symbolic Computation and Efficient Symbolic Differentiation
- A Non-Recursive Linear O(n) Approach to Symbolic Derivative Calculation

AWARDS/ RECOGNITION

Fairfield University School of Engineering & Mathematics Department — 2021, 2021, 2021, 2020

- Award for *Excellence in Mathematics*
- *Arthur F. Derschowitz* Award in Mathematics
- Presented *Modern Techniques in Natural Language Processing* at 2021 ASEE Conference
- Inducted into *Tau Beta Phi*, Engineering Honor Society

Fairfield University/ Sikorsky Aircraft Co. — 2020, 2018, 2016

- Speaker on Experiential Learning, Magis Day 2020
- Role Model Speaker at Sikorsky Prize Award Banquet
- Recipient of Excellence in Mathematics and Science Sikorsky Prize

Pratt & Whitney Museum, East Hartford, CT — 2017

- Presented *Aircraft Conflict Resolution Cataloguer* at 2017 Grant Expo

NASA Connecticut Space Grant Consortium — 2017

- Student Travel Grant Recipient for *Aircraft Conflict Resolution Cataloguer* paper

SKILLS

Programming Languages: VB.NET, C, C++, C#, Haskell, Java, Python, Ada

Web Development: Amazon Web Services, ASP.NET & MVC, Razor, Google Apps Scripts, Google APIs, JavaScript, AngularJS, HTML, CSS, Bootstrap

Data Science in Python: scikit-learn, numpy, pandas, TensorFlow, keras, neural-networks

Hardware: Circuits, Autodesk Eagle, PCB Design, Arduino, Raspberry Pi, Soldering

Mobile Application Development: Xamarin.Forms, Android Studio, XAML

Databases: SQL, SQLite, SQL Server, MS Access, Oracle

IDE Experience: Proficient with NetBeans, Eclipse, Visual Studio, VSCode, Spyder, Jupyter, Notepad++

Computer Science: System Architectures, Algorithms, Graph-Theory, Data Structures

Assembly: Computer Organization of MIPS Instruction Set (assembly code, RISC pipeline)

Software Engineering: Agile Development Methodologies, Object-Oriented Design, UML, Git

Mathematics: Linear Algebra, Analysis, Calculus, Statistics, Graph Theory & Discrete Structures

Other: Linux, LaTeX, Game Development, Pathfinding, Symbolic Computation, Boolean Algebra