Michael (Mike) A. Pieratt

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EDUCATION – *The University of Texas at Austin*

M.S. in Aerospace Engineering, Controls, Autonomy, and Robotics: GPA 3.03/4.0 May 2017
B.S. in Aerospace Engineering: GPA 3.61/4.0 May 2016

EXPERIENCE

Principal Software Engineer: Northrop Grumman Corporation, MACE, Software Team 7/22 - Present

- Designed, developed and tested software solutions for the Multibeam Array for Cooperative Engagement SW IPT
- Created software interfaces and middleware between existing hardware using Agile-like methods and CI/CD
  - **C++** App to handle message exchange between hardware nodes including message validation, ack/nack
  - **Python** script to automate **C++** class message generation from hardcoded configuration controlled requirements
- Contributed to a phenomenal customer-demo and CDR with a large complement of stakeholders from directors, NG fellows, government and customers present with extremely positive feedback exceeding expectations

Senior Navigation Engineer: Boeing, CST-100 Starliner, Guidance, Navigation and Control 4/21 – 7/22

- Created a several **MATLAB** tools by using OOP and improving readability, reusability and efficiency:
  - App to generate flight software commands for the navigation team with an automated GUI
  - Surface area modeler for satellites, to determine the surface area of any volumetric object exposed along the velocity vector. This modeler also determined center of areas to apply forces and torques
  - App to automate simulation and flight data plotting, analysis and exportation that reduced analysis time by 90%
- Participated in MCDC testing and developing unit tests for **MATLAB** and **Simulink** for autocoded **C** Flight Software

Senior Controls Engineer: General Atomics ASI., Guidance, Navigation and Control 11/19 – 3/21

- Implemented nonlinear aerodynamic data and payload deployment into simulation using **C** and **VIM**
- Recaptured legacy flight control actuation system by recoding source **C** code blocks into **Simulink** 6DOF models
- Autocoded 6DOF models, implemented models into **C** source simulation, and performed regression testing
- Created end-to-end gap analysis tool using **MATLAB** for component verification and system-level validation

Controls Engineer: General Atomics Aeronautical Systems Inc., Guidance, Navigation and Control 11/17 – 11/19

- Ran 6DoF and Monte Carlo simulations. Monte Carlo and analysis for the development of control law design by writing **Python** automation test scripts, modifying source **C** flight and simulation code, running **MATLAB** LTI analysis, writing **MATLAB** post-processing scripts and **MATLAB** analysis tools

Student Engineer: Boeing, Space Launch System, Guidance, Navigation and Control **(**5/16 - 8/16) | Manufacturing Engineering (5/15 - 8/15) | Main Propulsion, Feedlines (5/14 - 8/14)
Philips Scholar: Air Force Research Laboratory, Kirtland Air Force Base 6/13 - 8/13

RELATED EXPERIENCE

- Miscellaneous Coursework: Harvard CS50's Introduction to Game Development
- Active Secret Security Clearance; In-scope [Tier 3], Original Investigation (11/2018)

SKILLS

- Programming languages: C/C++, C#, Python, Lua, HTML, Batch, Bash
- Tools: Eclipse, VIM, Visual Studio, Visual Studio Code, Tortoise SVN, Github, rpmbuild, Jenkins, gdb, Bitbucket, MATLAB, Simulink, SCADE, Unity, Unreal Engine 4, Love2D, Systems Tool Kit, 3DS Max, and GIMP
- Operating Systems: Windows, Linux (openSUSE, Ubuntu, CentOS, Mint, Debian)
- Exceptional experience in dynamics, orbital mechanics, control systems, estimation, and software development
- Excellent interpersonal, communication, leadership, teamwork, and problem-solving skills; highly capable to operate in collaborative and cross-functional environment
- Quick learner, able to pick up new languages and programs swiftly

PROJECTS

- Angry Birds, Pokémon, 3D Helicopter Game, Dreadhalls, Portal – using **Unity** for Harvard CS50
- Pong, Flappy Bird, Breakout, Match 3, Super Mario Bros., Legend of Zelda – using **Love2D** for Harvard CS50