Alexander Hong

CONTACT

Toronto, ON Canada
thealexhong@gmail.com

GitHub: @thealexhong
Website: thealexhong.github.io

EDUCATION

University of Toronto, Toronto, Ontario

Master of Science, 2014 - present
B.A.Sc. in Engineering Science, June 2014

- Thesis: Multi-Robot Machine Learning in Urban Search & Rescue (Advisor: Goldie Nejat)
- Relevant Courses: Algorithms & Data Structures, Database Systems, Artificial Intelligence, Scientific Computing, Systems Design, Control Systems, Robotics

RELEVANT EXPERIENCE

Epson Canada, Markham, Ontario

Computer Vision Software Engineer Intern, *R&D* **May 2012 - Aug 2013**

- Analyzed cascade object detection and keypoint matching algorithms in MATLAB to be used in adaptive robotics, improving algorithm pipeline's performance by $> 30\%$
- Developed evaluation software tools in C++ for machine vision algorithm solutions analysis, providing effective feedback of algorithm's performance to research team
- Built frameworks for automating both code-driven and GUI software testing, reducing testing process time by 75%

MDA Corporation, Brampton, Ontario

Autonomy & Controls Lead, *Space Systems Design* **Sept 2013 - Dec 2013**

- Designed a space system for orbital debris removal using top-down design methodology, leading to rigorous design reviews
- Led team in addressing the command & control aspects of the design, creating control systems and software architectures while acknowledging stakeholders' needs

Univesity of Toronto, Toronto, Ontario

Flight Simulation Research Intern (Advisor: Peter R. Grant) **Summer 2011, Winter 2014**

- Improved upset recovery training for pilots by implementing stall-warning and stall-recognition software onto flight simulator
- Increased RC aircraft maximum flight speed from 15 m/s to 17 m/s, by developing software tools for optimizing aerodynamic, structural, and propulsive performances

Holography Research Intern (Advisor: Emanuel Istrate) **Summer 2010**

- Created software for optimizing brightness of full colour digital holograms, increasing brightness in final product by 10%

Autonomous Robotics Design Competition **Winter 2011**

- Designed successful autonomous robot to deploy traffic-cones onto roads with unsafe conditions
- Led team in programming MCU logic, and designing sensor circuits, ranking top 5 in contest

TECHNICAL SKILLS

- **Programming**: C/C++ (expert), Java (expert), Python, Ruby, Assembly, Prolog, SQL, *nix/Shell, Windows/batch, OOP, Test Automation, Computer Vision, AI, UI Design
- **Technologies**: MATLAB/Octave, Git/SVN, LaTeX
- **Design**: Software & Systems Engineering, Controls & Autonomy, Project Management

INTERESTS

Dragonboat Racing, Gymnastics, Rock Climbing, Painting, Machine Learning, AI, Startups