**Thilanka Munasinghe**

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**EDUCATION**

**Master of Science in Applied Mathematics** (Expected Graduation: May 2016)

West Virginia University, WV, USA

Advisor: Dr. Marjorie Darrah.

Thesis: “Cooperative Control of Multi-Agents Optimization (UAVs) Using Genetic Algorithms”.

**Master of Science in Mechanical Engineering,** December 2015

West Virginia University, WV, USA.

Advisor: Dr. John Kuhlman.

Thesis: Studying the Characteristics of Bubble Motion in Pool Boiling in Microgravity Conditions Under the Influence of a Magnetic Field.

**Bachelor of Science in Aerospace Engineering,** August 2008

West Virginia University, WV, USA.

Advisor: Dr. John Loth.

**WORK EXPERIENCE**

2014 Aug – Present **CodeLAB Instructor (Android Programing) and Graduate Intern** at WVU Office of Innovation, Entrepreneurship and Commercialization (LaunchLAB).

2014 Feb – 2014 May: **Visiting Research Student at Laboratory for Autonomous Marine Sensing Systems, MIT.**

I worked with the MIT underwater robotic research group to develop autonomous decision-making path planning software in C++ for Autonomous Under Water Vehicles (AUVs).

2013 May – 2013 Aug: **Visiting Research Student at Laboratory for Autonomous Marine Sensing Systems, MIT.**

I developed a smooth curve path-planning algorithm for MIT MOOS-IvP open source software for AUVs.

2011 May – 2013 Jul: **Research Assistant at Mathematics Department, WVU**

I developed Genetic Algorithms (GA) and undertook Genetic Programming for Cooperative Control Systems, Task Management, and Multi-Agent Systems.

2012 Jan – 2012Aug: **Research Intern at Information Research Corporation, Fairmont, WV.**

I integrated Genetic Algorithm software systems to a ground control station, and tested them with Unmanned Aerial Vehicles (UAVs).

2010 Jan– 2011 May: **Research Assistant at Mechanical and Aerospace Engineering.**

I conducted microgravity experiments to study the Kelvin Force Effect on Bubbles in paramagnetic liquids under microgravity conditions.

2005 Aug– 2009 May: **Resident Assistant at Dadisman Hall.**

I was a student mentor and staff member at the Dadisman Hall.

2003 Jun – 2004 Aug: **Intern at Arthur C. Clarke Institute for Modern Technology, Moratuwa, Sri Lanka.**

I conducted meteorite testing and studied the characteristics and composition of meteorites found in Sri Lanka.

**TEACHING EXPERIENCE**

Fall 2014 & Spring 2015: Android Programming Instructor

Fall 2011: Math Tutor at Mathematics Learning Center, Department of Mathematics WVU

Aug 2005 – May 2010: Math and Physics Tutor at WVU Engineering Learning Center

Summer & Fall 2009: Instructor for Engineering 102 (Intro to Engineering II)

Spring 2009: Instructor for Engineering 101 (Intro to Engineering I)

Fall 2008: Teaching Assistant University 101

**PROGRAMMING SKILLS**

* Proficient in Object Oriented Programing using JAVA and C++
* Proficient in Mobile Application Development using the Android Platform
* Proficient in Scientific Computing using Matlab and R
* Proficient in Design Tools such as AutoCAD and Solid Works

**AWARDS**

* **Best Business/Project Idea and Most Technically Interesting** Project Award at the Big Travel Data Hackathon 2013, organized by Hack Reduce for ***FlightR***.
* **Resident Assistant (RA) of the Year** Award of West Virginia University Dadisman Hall, 2008-2009 Academic Year.
* **Recognition Award from Sir Arthur. C. Clarke** for the meteorite and planetary science research 2003.

**INVITED TALKS**

* “Fluids and Bubble Motion Behavior in Microgravity Conditions” at Arthur C. Clarke Institute

for Modern Technology, Sri Lanka; May 2010.

* “High Altitude Balloon Satellites” at American National College, Sri Lanka; June 2007.
* Guest Speaker at S.Thomas’ College Mt.Lavinia to address the College Teaching Staff on “How to Teach High School Students Effectively” invited by Warden Dr. Indra De Soysa, Jan 2014.

**PUBLICATIONS**

**Journal Publications**

* Using Genetic Algorithms for Tasking Teams of Raven UAVs. Journal of Intelligent and Robotics Systems, *Marjorie Darrah, Edgar Fuller, Thilanka Munasinghe, Kristin Duling, Mridul Gautam, Mitchell Wathen.* 20th July 2012.
* A Flexible Genetic Algorithm System for Multi UAV Surveillance: Algorithm and Flight Testing. Journal of Unmanned Systems. *Marjorie Darrah, Jay Wilhelm, Thilanka Munasinghe, Mitch Wathen, Steve Yokum, Eric Sorton*. 7th January 2015.

**Conference Publications**

* Dynamic and Kinematic Characteristics of Bubble Flow Motion in Paramagnetic Liquid under Microgravity Conditions. International Conference on Fluid Flow Dynamics (ICFD), Sendai, Japan, *Thilanka Munasinghe,* November 2009.
* Transformation Mapping of Bubbles’ 2-D Circular Shape to an Elliptical Shape Under Influence of a Magnetic Field in Pool Boiling in Microgravity Conditions. 5th MIT Conference on Computational Fluid and Solid Mechanics, Massachusetts Institute of Technology (MIT), Cambridge, MA, *Thilanka Munasinghe.* June 2009.
* Investigating Bubble Expansion in Pool Boiling Under Influence of Magnetic Field in Microgravity Conditions. World Scientific and Engineering Academy and Society, (WSEAS), Moscow, Russia, *Thilanka Munasinghe, Sanket Joshi.* August 2009.
* Studying the Characteristics of Bubble Motion in Pool Boiling in Microgravity Conditions Under the Influence of a Magnetic Field. Recent Advances on Space Technology (RAST), IEEE – AIAA Joint Conference, Istanbul, Turkey. *Thilanka Munasinghe*. June 2009.
* Investigating Bubble Behavior in Pool Boiling in Microgravity Conditions, World Congress on Engineering (WCE), International Association of Engineers (IAENG), Imperial College, London, UK, *Thilanka Munasinghe*, July 2008.

**Poster Presentations**

* Efficient Path Planning Algorithms for AUVs. Google Research Labs Conference, June 2014.
* Laminar to Turbulent Transition in Fluid Flow in Boiling, AIAA Young Professional and Student Education Conference, John Hopkins University, Baltimore, Maryland, November, 2008.
* Boling in Microgravity, AIAA Student Conference, University of Maryland, College Park, April, 2008.
* “Research Day at Capitol - 2008”, Governor’s Chamber, Charleston, West Virginia. January 2008.
* “WV-NANO”, West Virginia University, Alumni Center, May 2009.

**PROFESSIONAL SERVICE**

Mar 2014 – May 2014: Member of the MIT Cricket Team

Aug 2005 – May 2008: Senior Mentor at Office of International Students and Scholars

Jul – Dec 2008: Member of the Student Conduct Board of WVU

2007 – 2008: Vice President, International Student Association WVU

2007 – 2009: Member of the WVU Cricket Club

2007 – 2008: Member of Multi-Cultural Leadership Club WVU

Aug 2005 – Dec 2008: Member of Hall Council, Dadisman & Stalnaker Hall

2000 – 2004: Member of Sri Lanka Student Red Cross Society

**REFERENCES**

**Mr. Matt Harbaugh**

Director at WVU, Office of Innovation, Entrepreneurship and Commercialization (LaunchLab)

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| **Prof. David Stewart** |
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