Arun Lakshmanan

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Technical Summary

Languages Python, C, C++, C#, Bash, TEX

Libraries NumPy, SciPy, Matplotlib, PSOPT, scikit-learn, opencv

Software MATLAB, *Simulink*, `git`, Processing, Unity

Operating Systems Linux (Ubuntu), ROS (Indigo)

Hardware mbed LPC1768, Odroid XU4, Beaglebone Black, AutoQuad 6, CrazyFlie 2.0

Education and Academic Experience

Aerospace Engineering,
Master of Science
University of Illinois at Urbana-Champaign
2014 – *expected* 2016
Urbana, IL

Relevant Coursework *Advanced Robotics Planning*, *Nonlinear & Adaptive Control*, *Virtual Reality*, *Control System Theory & Design*, *Introduction to Robotics*, and *Digital Control Systems*

Research Working with Prof. Naira Hovakimyan in optimal trajectory generation for robotic agents in urban environments.

Mechanical Engineering,
Bachelor of Technology
VIT University
2010 – 2014
Vellore, India

Relevant Coursework *Numerical Methods*, *Finite Element Analysis*, *Dynamics of Machinery*, and *Computational Fluid Dynamics*

Research Worked under Prof. Satyajit Ghosh on modeling accreted ice on aircraft structures for light passenger aircrafts.

Abroad Worked at the University of Stratclyde in Scotland on space-related projects and participated at the Scottish Space School. (Jun 2012)

Research Assistant
Summer 2015 – (Current)
UIUC

- Optimal trajectory generation for robots in congested environments.
- Integration of quadrotors in public safety applications.

Teaching Assistant
Spring 2015
UIUC

- Taught a course on numerical methods in the Computer Science department.
- Mentored students on different numerical analysis methods and their implementation in *Python*.

Research Experience

Software Developer
Jan 2015 – (Current)
Epic Systems Corporation
Verona, WI

- To be determined...

Junior Software Dev.
June 2014 – Jan 2015
General Dynamics
Fairfax, VA

- Maintained and enhanced existing software solution using X programming.
- Redesigned graphical system to adhere to best practices in object-orientism.
- Consolidated duplicated functionality and polished an NFS mount manager.

Server Administrator
Sept 2013 – May 2014
St. Mary's College
St. Mary's City, MD

- Prepared and implemented an authenticated documentation server using Redmine.
- Maintained the hardware, software, firewalls, and other security measures for the department's subnetwork of 10 – 15 servers (both physical and virtual) via remote Linux administration using `ssh`/PuTTY.

Intern
May – Sept 2013
Progeny Systems, Inc.
California, MD

- Created, documented, and maintained several virtual systems and virtualized existing infrastructure systems with vSphere/KVM via primarily remote Linux administration.
- Independently responded to and resolved non-critical emergency situations swiftly with minimal down-time or impact to end-users.

Student Technician
2010 – 2013
St. Mary's College
St. Mary's, MD

- Supported clients in the use of the network and their software, troubleshooting both software and hardware problems on both Windows (Dell) and Apple computers.
- Inventoried and organized departmental property.
- Prepared aged hardware for release within state security specifications.

Personal Information & Interests

- Experienced user of LaTeX, a system used to produce documents of high quality and typographical consistency.
- Currently an official representative of StackExchange to the international TeX User's Group.
- Contributed TeX extension packages to CTAN.
- Edited and produced a promotional video for a diversity program at St. Mary's College (archived).
- Maintain/contribute to several open-source projects using more conventional languages, such as *Emacs* Lisp, Python, Java, C, and Objective C. (Contributions range from testing to discussion to design to program code.)

Publications

[1] Marinho, Lakshmanan, Cichella, Widdowson, Cui, Jones, Sebastian, Goudeseune. **VR Study of Human-Multicopter Interaction in a Residential Setting**. *Virtual Reality (VR), IEEE*. IEEE, 2016.

[2] Lele, Lakshmanan. **Optimization of Extreme-Weather Forecasting Systems in Developing Nations**. *International Research Journal of Earth Sciences*, 2015.

Awards

- Twice CSL Video of the Month award winner at University of Illinois.
- Winner of

Additional details on my projects and interests can be found at `www.arunlakshmanan.com`.