Vishwanath Raman

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Master's Thesis

Prediction of Ablation Site for Ventricular Tachycardia(VT) Using Machine Learning *February 2019*

- Analyzed performance of multi task learning versus traditional regression models like lasso to predict the ablation site for VT.
- Compared different penalty terms for the multi task learning models.
- Pre-processed the Electrocardiogram (ECG) data and manually annotated onset and offset of the QRS complex for analysis.

Tools/Software: MATLAB, Python (scikit-learn), C++, Bash.

Experience

Software Engineer, Sterling Medical Devices *April 2018 – September 2018*

- Developed front end and back end using C# WPF in an application to be used for clinical trial, using the MVVM architecture.
- Performed static analysis and unit testing using SciTools Understand and Tessy 4.0 on a native C code base.
- Prepared documents required for 510(k) submissions to the FDA using company guidelines.

Tools/Software: C#, C, C++, MS Visual Studio, SciTools Understand, Tessy 4.0, Polarion.

Software Engineer II, Baxter Healthcare Corporation *October 2015 – August 2016*

- Automated manual test procedures for the Master Drug Library Editor (MDL).
- Development of MDL using the WPF framework in C# and LINQ.
- Implemented and debugged the Wi-Fi protocols for the Spectrum Infusion Pump.
- Followed agile development using Scrum.

Tools/Software: C#, C++, MS Visual Studio, Wireshark.

Research Assistant, Rochester Institute of Technology *January 2015 – May 2015*

- Tracked facial features of a user onto a custom animated model in real-time, which could then be displayed on a separate screen/projector.
- Showcased at the Year of Light Street Light Festival 2015 in Rochester, NY.

Tools/Software: Autodesk Maya, Faceshift Studio, Unity, C#.

Research Assistant, Rochester Institute of Technology *September 2014 – September 2015*

- Used an augmented reality device(CyberGlove II) for medical diagnosis, in collaboration with University of Rochester.
- Developed existing code base and collaborated in the design and implementation of data collection for analysis.
- Contributed to the published paper in HAND (N.Y.) Link to publication.

Tools/Software: CyberGlove II, MS Visual Studio, Qt, C++.

Highlights

- C++, C#, MATLAB, Python, Java
- Scikit-learn, OpenGL, LINQ, SQL
- Git, SVN
- MS Visual Studio, Eclipse, Unity
- SciTools Understand, Tessy 4.0
- Static analysis, unit testing
- Linear Regression, Machine learning
- Agile development; JIRA, Polarion

Projects

- Developed a renderer in C++. Used STL. (Source)
- Developed a chess game showcasing Aspect Oriented Programming in C++ on Linux. (Source)
- Created a parser and renderer to display a .obj file from Maya, using OpenGL in Java. (Source)
- Developed a system to play music from gestures using the Microsoft Kinect. (*Team Project*) (Source)
- Implemented an A* search, random forest, and neural network in Python. (Source available on request)

Education

Master of Science in Computer Science *August 2013 – February 2019*
Rochester Institute of Technology, Rochester, NY, USA

Bachelor of Engineering in Computer Engineering *July 2008 – July 2012*
University of Mumbai, Mumbai, India