

Tamizh selvan Venkatesan

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EXPERIENCE

• University of Guelph

Developer-ML & Research Assistant

Guelph, ON, Canada

Sep 2019 - Dec 2019

- Analyzed structural composition of whole wheat bread and bread with different protein compositions using Watershed Algorithm for image segmentation and GLCM for feature extraction. Performed data cleaning, data transformation, model development and model validation.
- Implemented U-Net, R-CNN architectures and improved classification performance by 20%.
- Tools: OpenCV, Numpy, Pandas, Keras, Tensorflow.

• University of Guelph

Graduate Research Assistant

Guelph, ON, Canada

Apr 2018 - Aug 2019

- Implemented SPEA-2(Strength Pareto Evolutionary Algorithm-2) multi-objective optimization evolutionary algorithm.
- Experimented various plugins such as clustering, anomaly detectors and support vector machines on top of SPEA-2 framework in its ability to obtain Pareto optimal solutions.
- Link to my thesis <http://hdl.handle.net/10214/17498>.

• Strobilanthes

Application Developer

Chennai, India

Apr 2017 - Dec 2017

- Developed Location Services API for Android Application using Firebase NoSQL Real-Time Database and Google Maps API in order to provide optimized location aware context-based information to clientele.
- Implemented frameworks such as Volley, Gson and Okhttp for a quicker request-response system.
- Incorporated Firebase Authentication and Firebase Cloud Messaging for push notifications within the application.

• Space Technosolutions

Software Engineering Intern

Chennai, India

Sept 2015 - Dec 2015

- Developed full stack web app using HTML/CSS/Javascript frontend and Flask backend.
- Streamlined payment process by integrating third party tools such as Stripe API and deployed the web app using docker.
- Fixed bugs, added new features and performed unit tests on Flask stack.

• Gekay Trading

Software Developer Intern

Chennai, India

Oct 2014 - Dec 2014

- Worked on an IOT product that deals with auto adapting temperature of an equipment through wireless data communication.
- Explored arduino and android integration through bluetooth communication.
- Wrote code to integrate realtime temperature analytics and data logging within the android app based on the data received from the arduino temperature sensor.

• Gekay Trading

Android Developer Intern

Chennai, India

Apr 2014 - Jul 2014

- Prototyped design for android app using XML and Adobe Illustrator.
- Created a Java class to connect android client to PHP scripts which contain SQL database queries and parse JSON data.
- Adhered towards android material design guidelines.

PROJECTS

• Emoto

- Published a diary journal android app in Google Play Store that can analyze the sentiment of the diary content posted by the user.
- Amazon EC2 hosts the Flask web service and machine learning models. Room SQLite local database to store diary content, credentials and used Retrofit API for sending JSON data to Flask web service.

• Sum Product Networks

- Deep probabilistic networks that provides bayesian inference based on input arguments.

• Project Locato

- Object tagging and location tracking with built in SQLite database, caching using SharedPreferences and NFC support using Android Studio IDE.

PROGRAMMING SKILLS

- **Languages:** Java, Python, Javascript(ES6), Julia, C++, C, SQL, HTML5, CSS3.
- **Machine Learning Libraries:** Numpy, Pandas, Seaborn, Matplotlib, Tensorflow, Keras, NLTK, Scikit-learn.
- **Technologies:** AWS(EC2), PostgreSQL, Android, Flask, NodeJS, REST API, JSON, JWT, Docker, GDB, OpenCV.
- **Others :** Jupyter, Git, Android Studio, Vim, Linux(Fedora), VS code, IntelliJ.

EDUCATION

- **University of Guelph** Guelph, ON, Canada
Masters in Computer Science; GPA: 3.77/4.0 *Jan 2018 – Dec 2019*
Graduate Teaching Assistant: System Analysis and Design of Computer Applications
Thesis: Incorporating Anomaly Detection Techniques Within SPEA-2
- **Anna University** Chennai, India
Bachelors in Computer Science and Engineering *Apr 2013 – Apr 2017*
- **Coursera Deep Learning Specialization** Canada
Courses: Neural Networks and Deep Learning, Optimization and Regularization in Deep Neural Networks *Jun 2019 – Jul 2019*