Venkata Devesh Reddy Seethi

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Software/Machine Learning Engineer

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Skills

Languages	Python, C++, Embedded C, Java, Javascript, R.
Electronics	Computer Architecture and Organization, Microelectronics, VLSI, Embedded Systems.
Machine Learning	Multimodal fusion, Computer Vision, Big Data, Visual Analytics, Data Visualization.
ML Frameworks	Tensorflow, TensorHub, Pytorch, CV2, SKlearn, Spark, SHAP, ML360, PyAudio, Transformers.
Web Tools	NodeJS, Flutter, PassportJS, Express, React, HTML, CSS, PHP.
Databases	PostgreSQL, Heroku, MongoDB, Intel DevCloud, AWS, GCP, Firebase.
Others	Android programming, computer graphics, docker, git, Nvidia Jetson, Raspberry Pi, Arduino.
Operating Systems	Ubuntu, Arch Linux, MacOS, Windows.
IDE	Tmux+Emacs, VSCode, Jupyter, Spyder, CLion, PyCharm, Android Studio.

Technical Experience

Graduate Research Assistant   **Oct 2019 – Present**
Northern Illinois University, (Professor : Dr. Pratool Bharti)   *Dekalb, IL*

- Leverage computer vision to detect the movement patterns of Alzheimer's patients.
- Built Optimized and compressed machine learning algorithms for edge devices.
- Integrated AI in healthcare and disease diagnostic applications for COVID-19.
- Researched on human activity recognition using pervasive technologies for healthcare applications.
- Programmed an Android smartwatch application to capture sensory data from smartwatches and upload data to firebase cloud.
- Teaching assistant for graduate courses: 1) Neural networks and computer vision 2) Applied machine learning .

Technology Support Analyst   **Aug 2018 – Dec 2019**
Northern Illinois University, Founders Memorial Library   *Dekalb, IL*

- Trained student workers to provide technical support to academic faculties and students
- Documented Technical procedures for troubleshooting technical issues related to network and software applications.
- Resolved over 500 technical issues on graphic cards, OS imaging, systems hardware, and universities affiliated applications.

Embedded Systems Internship   **May 2016 – Jul 2016**
Defense Research and Developmental Organization   *Hyderabad, India*

- Generated daily reports by running simulations on embedded systems.
- Designed four voltage and current regulation systems on an embedded chip, built a software model on Proteus with a 5% increase in efficiency, from the baseline model.
- Explored Embedded Systems integration with network and reinforcement of OWASP securities in the Internet of Things.
- Analyzed functions of Embedded Systems in automatic component testing and hydraulics.

Publications

- **An Explainable-AI approach for Diagnosis of COVID-19 using MALDI-ToF Mass Spectrometry (under review).**   **Apr 2022**
  Venkata Devesh Reddy Seethi, Zane LaCasse, Prajkta Chivte, Elizabeth R Gaillard, Pratool Bharti
- **CovidAlert - A Wristwatch-based System to Alert Users from Face Touching.**, 15th EAI International Conference on Pervasive Computing Technologies for Healthcare   **Nov 2021**
  Mrinmoy Roy, *Venkata Devesh Reddy Seethi*, Rami Lake, Pratool Bharti
- **MALDI-ToF Protein Profiling as a Potential Rapid Diagnostic Platform for COVID-19.**, Journal of Mass Spectrometry and Advances in the Clinical lab   **Mar 2021**
  Prajkta Chivte, Zane LaCasse, *Venkata Devesh Reddy Seethi*, Pratool Bharti, Joshua Bland, Shrihari S Kadkol, Elizabeth R Gaillard
- **Master Thesis in Human Activity Intensity Detection Using Wrist-Worn Wearable Sensors.**   **Dec 2020**
  Venkata Devesh Reddy Seethi, Pratool Bharti (Advisor), Reva Freedman (member), Hamed Alhoori (member)
- **CNN-based Speed Detection Algorithm for Walking and Running using Wrist-worn Wearable Sensors.**, IEEE International Workshop on Deep Learning on Edge for Smart Health and Well-being Applications   **Aug 2020**
  Venkata Devesh Reddy Seethi, Pratool Bharti
- **When Illinois Students Leave The State For College, Who Reaps The Rewards?**   **Aug 2019**
  Peter Medlin, *Venkata Devesh Reddy Seethi*, Cole Freeman, An Yu Kuo

PROJECTS

- **A Novel Visualization Approach to Interpret Rules of Random Forest.**   **Fall 2021**
  Developed a visualization tool for random forests using D3JS and Javascript.
- **Computer Graphics Pipeline Based on Pixar's Renderman**   **Spring 2021**
  Programmed algorithimic modules of graphics pipeline such as generating simple and complex shapes, coloring, lighting, scene creation from scratch in C++.
- **Understanding Public's Perspective on Health with Instagram Posts**   **Fall 2019**
  Collected data from instagram using web scraping and built computer vision models using transfer learning.
- **Exploring Bot Strategies and Context of the information Disseminated on Twitter**   **Fall 2019**
  Developed and deployed a twitter bot on AWS. Retrieved bot accounts tweeting scholarly articles using Altmeterics and Rapid APIs' and built topic models.
- **Washington DC BikeShare Visualization**   **Spring 2019**
  Gathered data from public repositories and generated a story-based visualization to observe patterns in bike usage in response to climate change.
- **Scientific and Social Recommendation System for Scholarly Articles**   **Fall 2018**
  Built collaborative and content-based recommendation system for recommending scholarly articles and academic social profiles.
- **Smart Home Automation for Energy Savings**   **Spring 2017**
  Developed a miniature prototype using raspberry pi, relays, and infrared sensors to automate lights switching in a home and an android app to remotely control of appliances.
- **Wide-range reverse car parking sensor**   **Fall 2016**
  Modeled a system with 270° field of view for obstacle detection by a fusion of three ultrasonic sensors connected to an Arduino.

EDUCATION

PhD in Computer Science, *Northern Illinois University*	**Jan 2021 – Present**
Masters with Thesis in Computer Science, *Northern Illinois University*	**Jan 2018 – Dec 2020**
Bachelors in Electronics and Communication Engineering, *GITAM University*	**2013 Aug – 2017 Aug**

ACTIVITIES

Intel Graduate Ambassador at Northern Illinois University	**Feb 2022 – Present**
United Nations Educational, Scientific and Cultural Organization Volunteer for TECH2017 conference	**Dec 2017 – Apr 2018**
Mozilla Student Ambassador at GITAM University	**Aug 2016 – Aug 2017**
Entecres Labs Campus Ambassador	**Aug 2016 – Aug2017**