CHINMAY SAHU

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EDUCATION

PhD Candidate, Electrical and Computer Engineering, Clarkson University (GPA 4.0/4.0) ***fall 2017-present***
M.S. Process Control Engineering, NIT, Tiruchirappalli (GPA 9.2/10.0) ***fall 2013 - summer 2015***
B.S. Electrical and Electronics Engineering, Biju Patnaik University of Technology (GPA 8.77/10.0) ***fall 2008 - spring 2012***

SKILLS

Programming Languages: Matlab, C ++, C#, Python.

Machine learning Concepts: Classification, Regression, Clustering, Recommender system, Deep learning, CNN, RNN.

AI Technologies: Numpy, Pandas, Matplotlib, TensorFlow, Scipy, Keras, Google Colab, Scikit-Learn.

Certifications: ML & Deep Learning Specialization by Andrew Ng (Coursera), Tensorflow specialization by Laurence Moroney

Web: HTML, CSS, jQuery, JS (Beginner)

Database: MySQL, MongoDB (Beginner).

Relevant coursework: Digital Signal Processing, Coding & Information Theory, Detection & Estimation Theory, Adaptive Signal Processing, Pattern Recognition & Neural Networks, Advanced Applied Statistics, Advanced Biometrics

Methodologies: Agile, Scrum, Design Patterns

Operating Systems: Variants of Linux, Windows, Mac

PROFESSIONAL EXPERIENCE

Research Assistant at Clarkson University, Potsdam, New York ***May 2018 – present***

- Design and develop localization algorithms to solve problems in fields related to IoT, biomedical engineering, geo-hazards, and biometrics.
- Dealing with research problems such as passive tracking, localization of secondary pacemakers, user authentication for security and privacy.

Teaching Assistant at Clarkson University, Potsdam, New York ***Jan 2018 – April 2018***

- Instructor and grader for linear circuits for spring'18 for a class size of 72.
- Instructor and grader for junior year Electrical circuit design lab for fall'18 for lab size of 48.
- Provide weekly feedback to students on HW's and Lab reports. Conduct office hours to tutor.

Research Assistant at Clarkson University, Potsdam, New York ***Sept 2017 - Dec 2017***

- Studied and analyzed error distribution in wireless sensor network using detection and estimation theory.
- Designed a Monte-Carlo simulation to visualize error in a large scale wireless sensor network.

Software Designer at Alstom Transport India Ltd. (C++, C#, Web technologies) ***Sep 2015 - July 2017***

- Delivered critical solutions to the client as a software designer, working on numerous backend windows based services built using WPF, WCF & MVC architecture in .NET; Collaborated with senior software designers to work on all tiers of the product development and gained expertise in writing codes and fixing bugs in .NET based development environment.
- Lead, architected & designed a testing tool for the client at Charleroi, Belgium. Effectively handled research, design & implementation and ensured fast progress, approvals by organizing meetings with the client, discussing requirements, analyzing them and delivering the product on time.
- Researched, designed & developed a stable, scalable and maintainable testing framework for ASP.NET based applications with a strong focus on delivery and code maintainability, applied design patterns as and when appropriate to ensure extensibility of the system.

Research Scholar at National Institute of Technology, Trichy, India (MATLAB) ***July 2013 -Aug 2015***

- Developed and adapted a metaheuristic algorithm for a model design using real-time closed-loop data in Matlab.
- Designed an explicit model predictive controller for multi-variable and nonlinear processes using Matlab platform.

ACADEMIC PROJECTS

Estimating the core of spiral waves for atrial fibrillation ablation (IoT, Detection & estimation theory) ***Fall 2018-Ongoing***

- Designed and formulated two novel localization algorithms to identify the source of spiral waves during cardiac arrhythmia.
- Validated the algorithms by running Monte-Carlo simulations to evaluate the performance of algorithms in MATLAB.
- Won best poster presentation award in "Mathematical Models and Simulations" category at 3rd Annual Research and Project Showcase at Clarkson University.

Real-time trajectory tracking of mobile passive agents using *ad hoc* sensor networks ***Spring& Summer 2018***

- The objective is to identify real-time trajectories in a mall like space using Bluetooth RSSI signals.
- Implemented matrix decomposition algorithms like robust PCA, Go-decomposition algorithms for event detection in MATLAB.

Error analysis in wireless sensor network ***Fall 2017***

- Analyzed error propagation and its distribution in a large sensor network using detection and estimation theory.
- Ran Monte-Carlo analysis to quantify errors in different localization algorithms in MATLAB.

PUBLICATIONS

- Divyesh, V. R., **Chinmay Sahu**, Velswamy Kirubakaran, T. K. Radhakrishnan, and Muralidharan Guruprasath. "Energy optimization using metaheuristic bat algorithm assisted controller tuning for industrial and residential applications." *Transactions of the Institute of Measurement and Control* 40, no. 7 (2018): 2310-2321.

- **Sahu, Chinmay**, V. Kirubakaran, T. K. Radhakrishnan, and N. Sivakumaran. "Explicit model predictive control of split-type air conditioning system." *Transactions of the Institute of Measurement and Control* 39, no. 5 (2017): 754-762.
- Kirubakaran, V., **Chinmay Sahu**, T. K. Radhakrishnan, and N. Sivakumaran. "Energy efficient model based algorithm for control of building HVAC systems." *Ecotoxicology and environmental safety* 121 (2015): 236-243.

INTERNATIONAL CONFERENCE PRESENTATIONS

- **Sahu, Chinmay**, Mahesh Banavar, Jie Sun, Modified Time Delay of Arrival for Biomedical and Environmental Applications, Asilomar 2019 (accepted).
- **Sahu, Chinmay**, T. K. Radhakrishnan, and N. Sivakumaran. "Real time closed loop data based estimation and explicit model based control of an air conditioning system implemented in hardware in loop scheme." In *2015 International Conference on Robotics, Automation, Control and Embedded Systems (RACE)*, pp. 1-7. IEEE, 2015.
- **Sahu, Chinmay**, V. Kirubakaran, T.K. Radhakrishnan, N. Sivakumaran, Closed loop building data based estimation and energy efficient model predictive control of Heating Ventilation and air conditioning system, International Conference on Green Technology for Environmental Pollution Prevention and Control 2014, NIT Tiruchirappalli (2014) 239.

POSTER PRESENTATIONS

- **Chinmay Sahu**, Mahesh Banavar, Jie Sun, Optimized Modified Time delay of arrival for Biomedical and Geo-hazard Applications, 2019 Annual Summer Research and Project Showcase, Aug 2019, Clarkson University, Potsdam, NY. [*Won "Best Poster Presentation" in the Computational Methods (Graduate) category]*
- **Chinmay Sahu**, Mahesh Banavar, Jie Sun, Estimating the core of spiral waves for Atrial Fibrillation Ablation, Third Annual Spring Research and Project Showcase, April 2019, Clarkson University, Potsdam, NY. [Won "*Best Poster Presentation" in the Mathematical Methods and Simulations (Graduate) category]*
- **Chinmay Sahu**, Mahesh Banavar, Jie Sun, Jack Koplowitz, Estimating the core of spiral waves for Atrial Fibrillation Ablation, Center for Identification Technology Research (CITeR) Conference, Nov 2018, Niagara Falls, NY.
- **Chinmay Sahu**, Mahesh K. Banavar, Performance comparison of matrix decomposition algorithms in event detection, Research and Project Showcase, July,18, Clarkson University.
- **Chinmay Sahu**, Kevin V. Mack, Mahesh K. Banavar, De-noising and event extraction from noisy wireless data using Go-Decomposition algorithms, Research and Project Showcase, April,18, Clarkson University.