

Akhil Kunche

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ACADEMIC QUALIFICATIONS

Ph.D. candidate in Operations Research, Politechnika Wroclawska, Poland. Expected July 2022.

M.S. in Computer Engineering, Politechnika Wroclawska, Poland. August 2017, Grade – 4.5/5.

PROFESSIONAL EXPERIENCE

Project Engineer, FirstESCO India Pvt. Ltd., Visakhapatnam, India, August 2017 – Present

Company specialising in innovative technology for waste heat recovery ORC power systems and alternative fuel combustion systems

- Working on PLC/SCADA (Supervisory Control and Data Acquisition) systems for power plant automation.
- Involvement in design of system logic for solid fuel combustion systems using petcoke for glass melting furnaces.
- Development of system PFD and animations for ORC Power systems.

Teaching Assistant, Politechnika Wroclawska, Poland, February 2019 – July 2021

Public University in Wroclaw, Poland

- Managed and taught laboratory courses for students at both Bachelor's and Master's level in topics such as Information Systems Management and Discrete Optimisation & Network Flows.

INTERNSHIP

Trainee Intern, Visakhapatnam Port Trust, Visakhapatnam, India, January 2014 – July 2014

Organisation responsible for the operation and maintenance of the port of Visakhapatnam

- Worked on a tidal height prediction system in order to improve the planning of ship berthing schedule and optimise fuel consumption. My work included development of a mathematical model to estimate the height of the tide at any given time
- Worked on the digitisation of the grievance handling method within the organisation, by implementing a grievance management system through a web portal. My work included design and development of the underlying MS-SQL database.

ACADEMIC PROJECTS

Title: Application of System Dynamics approach to aid decision-making related to carbon mitigation strategies through analysis of impact of carbon-tax and green subsidies on a cement plant, October 2018 – Present

- Working on the design and development of a flexible decision-support tool in the form of a system dynamic simulation model that could be applicable for any individual cement plant to devise reactionary strategies to comply with future CO2 emission policies while minimising plant expenditure.

Title: Interactive Mobile Support System for Sports Training, Master's dissertation topic, November 2016 – July 2017

- Investigated and explored the possibility of using Heart Rate Restitution as a means of assessing fitness and performance of an athlete, and thereby providing additional assistance during training. The project also involved the development of a tool to autonomously extract and identify relevant parts of the Heart Rate data recorded using a wearable mobile device.

Title: Weather Prediction using Artificial Neural Networks, October 2016 – February 2017

- Utilised Multilayer perceptron (MLP) for training and prediction of a range of weather attributes for selected cities in Polska.
- Also investigated the variance in root mean square error (RMSE), when the model is trained with MLP in different epoch and hidden layer configurations.

Title: Paytooth – Peer to Peer Payment System, Bachelor’s thesis, January 2015 – July 2015

- Designed and developed a decentralised, peer to peer cashless money transfer system, and explored the idea of completely offline payments.
- Studied and implemented Bluetooth as a peer to peer communication protocol for the payments.

Title: Educational Portal for Student – Teacher interaction, March 2016 – July 2016

- Designed and developed an E-Learning web platform using core software development principles, on the lines of *Moodle*, for fostering efficient assessment of students and their interaction with teachers.

Title: Minesweeper, January 2012 – March 2012

- Designed and developed a game similar to *Minesweeper* using Java Swing framework for the GUI.

PUBLISHED PAPERS

- Kunche, A., & Mielczarek, B. (2021). Application of system dynamic modelling for evaluation of CO2 emissions and expenditure for captive power generation scenarios in the cement industry. *Energies*, 14(11), 3115
- Kunche, A., & Mielczarek, B. (2021). Application of system dynamic modelling for evaluation of carbon mitigation strategies in cement industries: A comparative overview of the current state of the art. *Energies*, 14(5), 1464.
- Patel, R., Kunche, A., Mishra, N., Bhaiyat, Z., & Joshi, R. (2015). Paytooth - A cashless mobile payment system based on Bluetooth. *International Journal of Computer Applications*, 120(24), 38–42.
- Patel, R., Kunche, A., Mishra, N., Bhaiyat, Z., & Joshi, R. (2015). Comparative Review Of Existing Mobile Payment Systems. *International Journal of Applied Engineering Research*, 10, Number 7, 16873–16884.

MISCELLANEOUS ACTIVITIES

- Placed 2nd in the science Olympiad organised by the Science Olympiad Foundation (SOF) in my city, in the year 2007.
- Participated in cricket tournaments at district level, as part of Khammam District U-17 team in 2010.
- Volunteer at EKOSTRAŻ, an animal shelter based in Wrocław, Poland.