Raghavendra Vedula

Contact Information	Traffic Colony, Jatni, Odisha 752050	+91 9438417715
	vedularaghavendra03@gmail.com	vedularaghu.github.io

Research Interests Neural networks and deep learning, Artificial Intelligence, Machine Learning, Computer Vision and image analysis, and Human-Computer-Interaction (HCI)

Education

Bachelor of Technology with Honors — Computer Science and Engineering

College of Engineering and Technology — Expected 2019
Bhubaneswar, India

- Top 10% of the class with a GPA of 8.82 (after 6 semesters)

Higher Secondary — Central Board of Secondary Education

Kendriya Vidyalaya Khurda Road — Summer 2015
Khurda Road, India

- Topper of the Batch with 93.80%
- Received Rotary Club's Meritorious Award for being the topper

Research Experience

Research Intern — Escorts Group — May 2017 to Aug 2018

Computer Vision Assisted Autonomous Weeding for Cabbage
Supervisor: Mr. Nijagun Hiremath, DGM, Escorts Ltd

- Designed and developed a table-top model to simulate the autonomous weeding process.
- Seed funded 2000 USD from Escorts Group to facilitate research.

Research Assistant — Sept 2018 to Present

Plant Sustainability Enhancement
Supervisor: Prof. Mihir Narayan Mohanty, Dept. of ECE, ITER, SOA University

- Developed a drone based plant health monitoring system for remotely monitoring the plant health and receiving the on-site data.
- Currently working on automatic image analysis of the plant data for health monitoring

Work Experience

Google Code-in 2018 — Mentor at AOSSIE — Oct 2018 - Dec 2018

- Mentored developers of age 13-17 years for working on CarbonFootrpint - API.
- Helped the young developers with their issues on writing code in JavaScript, Node.js, React, and MongoDB

Google Summer of Code 2018 — Participant with AOSSIE — May 2018 - August 2018

- Designed and developed an API Explorer page for CarbonFootprint-API
- Created a portal for the suggestion of carbon emission data and worked on the back-end approval and addition into the existing database of the suggested data.
- Created an npm package for the CarbonFootprint-API for accessing the carbon emission data.
- Standardized the CarbonFootprint-API by integrating Swagger.
- Integrated JEST testing in the entire code base.

Mytrah Energy, Hyderabad — Data Engineering Intern Dec 2017 - Jan 2018

- Enhanced the process of storing the data by shifting it to the cloud based AWS S3 storage and automated this process by using AWS Lambda and python scripts.
- Created an SQL IDE for querying the data using React JS and AWS Athena.
- Developed a dashboard using front-end frameworks like React JS for data visualization.

Indian Railways, Bhubaneswar — Data Analytics Intern June 2017 - July 2017

- Analyzed the data of employees working in Indian Railways by visualizing the data using Python based libraries like Pandas, Matplotlib etc.
- Optimized the salaries of employees using the analyzed data by calculating the ratio of the total revenue generated to the number of passengers travelling.

Lecturenotes.in, Bhubaneswar — Software Engineering Intern May 2017 - June 2017

- Designed a search engine using Apache SOLR and Node.js for this class notes based start-up.
- Implemented dependency injection using Electrolyte (Lightweight Inversion of Control (IoC) container for Node.js) and added Full-text search feature along with suggestions.
- Validated input strings using regular expressions.
- Integrated an error logging system with sentry (open source error tracking) integration.

Publications

- **Raghavendra Vedula**, et al., "Computer Vision Assisted Autonomous Intra Row Weeder", *International Conference on Information Technology (ICIT)*, 2018 (Accepted)
- **Raghavendra Vedula**, Mihir Narayan Mohanty, et al., "Plant Sustainability Monitoring Using Unmanned Aerial Vehicle", *International Conference on Communication Computing Control and Devices*, 2018 (Submitted)
- **Raghavendra Vedula**, Meenakshi Pant "Word processing in the brain using a brainwave sensor", (In preparation)

Awards

ISTE Technical Symposium CET Bhubaneswar Chapter March 2018

- Best paper award among 40 papers from participants from colleges all over the state.
- Received a cash prize of 125 USD.

Meritorious Awards

- Received awards from Rotary Club, Indian Railways for being the topper in high school.

University Service

Counseling Service — Zairza Technical Society June 2016 - Present

- Conducted Introductory classes for freshmen/sophomore year students on Linux, JavaScript, Python, computer vision and basic algebra.
- Organized sessions and hackathons to promote emerging practices and technologies in computer science.

Senior Manager — ED-Cell, CET Bhubaneswar Nov 2015 - Present

- Conducted various sessions on Group Discussion, Debates, brainstorming start-up ideas.
- Served as the manager of the team of promotions department during college fests.
- Served as the manager of the team sponsorship management during college fests.

Community Service

Rajya Puraskar Scout — Bharat Scouts and Guides Aug 2005 - Aug 2015

- Participated in various state level and national level camps organized by Bharat Scouts and Guides
- Worked for relief teams and disaster management squads during *Cyclone Hudhud* which affected coastal regions of Odisha.
- Organized blood donation camps and several awareness programs like AIDS awareness, Pulse Polio, Beti Bachao Beti Padhao Yojna, Swachh Bharat Abhiyan in the underprivileged areas of Odisha.
- Served as a volunteer in Puri's Rath Yatra Festival (Biggest chariot festival in the country)

Volunteer — Google Developer Group, Bhubaneswar Sept 2015 - Present

- Organized several workshops in the field of web-development, UI/UX design and basics of machine learning for the students of different colleges in the state.
- Represented the organization as a speaker to present projects and innovations undertaken by the community members.

Volunteer — Microsoft Developers Community, Bhubaneswar Sept 2017 - Present

- Attended various bootcamps (Azure bootcamp), participated in IoT (Internet of things) workshops and attended community seminars on deep learning and artificial intelligence.

Projects

Word processing in the brain using brainwave sensor (Currently Working)

- Detecting the frequency of certain words using a deep learning model in the brain for detecting the word processing.
- Using a brainwave sensor for getting the frequency graph and planning to work with fMRI scan for detecting the word processing in the brain.

Plant Sustainability Enhancement — Drone based plant health monitoring system

- Drone, controlled through a remote server, collects the data (images through the attached camera and other data from the on-site sensors through Xbee) from an area of plantation and sends it to the server for health monitoring.
- Image processing for plant health monitoring and providing the data to the public for voluntary service.

Deep Learning Based Smart Waste Management System

- Deep learning based waste management system for separating the bio-degradable and non-biodegradable waste.
- Robot with an arm, to pick and separate the garbage, along with a camera connected to the server for real time image processing.

Route optimization and engine statistics monitoring for the buses of CET,Bhubaneswar

- Designed and developed a route optimization technique for real time route optimization of the buses using digital counters and GPS.
- Used Node.js, Socket.io, Redis for the website and Cassandra for data analysis.

CET Dimensions — ERP website of CET, Bhubaneswar

- Designed and developed a Node.js based ERP website for CET, Bhubaneswar.
- Internal marks, results, attendance and holidays are features of the website.

Skills and Communication

Technical Skills

- Programming Languages: *C, C++, Python3, JavaScript, BASH, Java*
- Web development: *HTML, CSS, JQuery, Express Framework, Node.js, Socket.IO, Flask, React JS, React Native*
- Work Tools and Frameworks: *Tensorflow, Scikit-Learn, LaTeX , Excel, Git*
- Databases: *MongoDB, MySQL, Redis , Cassandra, Postgres*

Communication Skills

- Proficient in English, Hindi, Odia, and Telugu (Native).
- Full Working Proficiency: *English, Hindi*

Relevant Academic Coursework

Machine Learning

- Artificial Intelligence (Honors[1]), Data Analytics (Honors[1]), Digital Image Processing, Soft Computing [2]

Mathematics

- Calculus, Linear Algebra, Discrete Mathematics, Computational Numbers Theory [2]

Computer Science

- Data Structures and Algorithms, Discrete Structures, Logic in Computer Science, Compilers, Operating Systems, Databases, Automata Theory, Computer Architecture

Online courses

- Neural Networks and Deep Learning; Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization; Sequence Modes; Convolution Neural Networks; Structuring Machine Learning Projects; Mathematics for Machine Learning: PCA (Imperial College of London); Mathematics for machine Learning: Linear Algebra (Imperial College of London) on Coursera

[1] Honors subjects are not mentioned in the transcript and a separate mark-sheet will be awarded after the completion of degree

[2] to be completed by December 2018