ASHWIN RAVINDRA BHARADWAJ

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EDUCATION

PES University, Bangalore, Karnataka, IN *Jul 2017 - Jun 2021*
Bachelor of Technology in Computer Science and Engineering - 8.89/10
Specialization in Algorithms
Twice recipient of CNR RAO Merit Scholarship (2017 and 2018)

Sri Kumaran Children's Home, CBSE, Bangalore, Karnataka, IN *Jun 2006 - Mar 2017*
Graduated from 12th grade with 92.2%
Achieved the highest score in 12th grade physics CBSE board examinations
Graduated from 10th grade with 9.0 GPA

PUBLICATIONS

A. R. Bharadwaj, S. S. Chandra, D. S. Nair, A. R. Hatim and A. Ravikumar, "Automated mythological scene recognition using machine learning and graphs", 2020 International Conference on Artificial Intelligence and Signal Processing (AISP), Amaravati, India, 2020, pp. 1-5, Jan 2020.

Ashwin R. Bharadwaj, Hardik Gourisaria, Hrishikesh Viswanath, "Video Frame Rate Doubling Using Generative Adversarial Networks", Computer Communication, Networking and IoT (ICICC 2020), Bengaluru, India, Aug. 2020

WORK EXPERIENCE

Cisco Systems, Bangalore *Jan 2021 - Present, Technical Undergraduate Intern promoted to Software Engineer*
- Currently developing new features and optimizing Cisco "Intersight" to improve user experience.
- Work involves python and Go and dealing with the concurrent communication between servers using REST APIs.

INTERNSHIPS

PES Innovation Lab, PES University *May 2020 - Aug 2020, Project Mentor*
- Mentored a team of juniors to develop a web app that aided in understanding of basic concepts in data structures and algorithms
- Worked with Python and Flask for the back-end and React JS for the front-end.
- Taught basic concepts of Client-Server model and REST based APIs to the interns.

Microsoft Innovation Lab, Bangalore *May 2019 - Aug 2019, Intern*
- Worked with a group of peers to develop a model that could associate artistic depiction of south Asian mythology with their description in the holy texts.
- The model used a myriad of Neural networks models aided by a graph based algorithm to gather information from the images.

Quantum Electronics Lab, PES University *May 2018 - Aug 2018, Intern*
- Helped in setting on experiments involving non-linear optics such as frequency doubling using KTP crystals and diode pumping.
- Worked on code that would estimate parameters needed for the experiments and control various actuators for precise positioning of lenses.

NOTABLE UNDERGRADUATE PROJECTS

- **Video photogrammetry** *Jan 2021 - Present*
  - A project that would convert a video taken with an ordinary camera to a point cloud that could be interacted with by the user. Two approaches were explored, firstly using ML (U-net model with transfer learning) and second which uses a stereoscopic approach.
- **Algorithm Visualizer** *Jan 2020 – March 2020*
  - A web application that allowed users to visualize various AI-based graph search algorithms like BFS, DFS, Uniform cost search, A*, Branch and bound, etc. The user had the ability to make custom graphs and set weights and set heuristics to help them understand the algorithms.
- **DBaaS** *Jan 2020 – Mar 2020*
  - Database as a Service. The project was intended to create a layer above IaaS but below SaaS to help users deploy their apps without worrying about the database aspect. The system was crash tolerant and had an autoscale feature based on the load on the system.
- **Distributed Computing** *(Sep 2019 – Dec 2019*
  - A simple system that divided repetitive large tasks among various compute nodes to maximize throughput while balancing work for all nodes on the system.
- **Genetic Neural Network** *Sep 2019 – Dec 2019*
  - Developed a genetic algorithm that trains a neural network and avoids local minima. The algorithm used simulated annealing to help the model avoid local minima. This algorithm was used to determine the variability of statements from people given parameters such as perspiration, eye movement, etc.
- **Virtual Reality Glove** *Jan 2019 – Mar 2019*
  - Developed a glove that collects the orientation of the hand and the positions of the fingers using an IMU and potentiometers and relays the data to a computer over Bluetooth to enable the user to control the cursor or characters in video games.

CO-CURRICULAR ACTIVITIES

- **PES Hackathon** (February 2020): Developed a novel model that can double the frame rate of videos. The project involved machine learning and computer vision.
- **E-yantra IIT-Bombay** (August 2018 – Feb 2019): Built an autonomous ground robot to re-enact the story of the thirsty crow. The project involved path planning, computer vision/graphics, and inverse kinematics.
- **NMIT RC Plane** (February 2019): Built a self-leveling RC Plane in 24 hours. The project involved CAD, Arduino programming, and construction and design of the plane.
- **KNMIT Robot Wars** (February 2018) Placed 3rd in a robot wars competition.

EXTRA-CURRICULAR ACTIVITIES

- Helped in organizing Hackathons conducted by Microsoft Innovation Lab at PES in 2019.
- Assisted in organizing Science fest and competitions in 2017 at PES University.
- Worked at a community center to provide free eye exams to patients from low-income backgrounds.
- Helped in the distribution of paper bags and helped local vendors switch to biodegradable bags to raise awareness.

TECHNICAL SKILLS

Programming Languages : C, C++, Python, Go, JavaScript
ML Frameworks : Tensorflow, Keras
Tools : Git, Github, Gitlab, Bitbucket, AWS, LaTeX
Hardware : Arduino, Rasberry Pi