Nishanth Rajkumar

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Objective

I believe that the fruitful past academic, research, and hands-on experiences I have had, the present grooming I am going through, and a focused, determined and passionate approach towards the future are the main ingredients for success in my long-term goals. I aim to work on research-oriented organizations that utilize and help in honing my skills.

Education

Vellore Institute of Technology, Chennai, India	*June 2018-Present*
Bachelors of Technology in Mechanical Engineering	*Cumulative GPA: 8.36/10.0*
Maharishi International Residential School, Chennai, India	*2016 - 2018*
CBSE – Computer Science	*12th 80%*
D.A.V Public School, Chennai, India	*2004 -2016*
CBSE – Computer Science	*10th CGPA 9.4/10.0*

Professional Experience

Research Intern-University of Alberta, Canada (MITACS Globalink Intern)   **Starts by Jul 2021**
   Supervised by Prof. Kim Adams
   Gained knowledge on control systems, familiarity with mathematical models of physical systems, brain controlled-interfaces.

Project Intern-cum-Part Time Job-Precimech Components and co   *Aug 2019-Feb 2020*
   Various parts for an unmanned ground-vehicle is designed, engineered, manufactured and assembled with its required electronic sensors for agricultural uses.

Industrial intern- HI-TECH Industries   **Jun 2020-Jul 2020**
   Undergone a technical internship on various machining processes using different milling centre's and also gained detailed knowledge of designing and analysis using CATIA and ANSYS.

Industrial trainee- Vishay Inter-Technology   **May 2019 – Jun 2019**
   Undertook various tasks which include designing and machining components in a multi-national company based on resistive foil technology sensors.

Team Captain and Co-Founder @ Atom Robotics, VIT Chennai, India   **Jan 2019-Present**
   An Intelligent Robotics and Satellite exploration team consisting of 50+ aspiring young minds. The team focuses on Intelligent ground vehicles targeting IGVC, USA; Planetary Aerial System using VTOLS targeting IPAS, Mars society South Asia (MSSA); Satellites targeting Can-Sat, USA.

Research Experience

Research Papers
1. Generative design optimization and analysis of connecting rod for weight reduction and performance enhancement at IOP Conference Proceedings: Journal of Physics-Under Review
2. A numerical analysis of composite planetary gears-Ongoing

Review Paper
1. A Performance Characteristics Review of Mahua Biodiesel in CI Engines

Research Project under Mentorship

Supervisor: Prof. Davidson Jebaseelan
The project offered by Indian Oil Corporation: A Study on the deformation of Vertical Storage Tanks with 5^0-10^0 tilt due to sloshing under the Action of Near-Fault Earthquakes-Ongoing

Area of Expertise

Design and Simulation Tools	Fusion360, SolidWorks, Catia, Ansys
Programming Tools	C, C++, Python, Matlab and Simulink
Machine Learning Tools	OpenCV, TensorFlow, Matplotlib, NumPy, Keras, PyTorch, Scikit
Hardware Tools	Arduino, Raspberry Pi, Drones, ESP, CNC
Linguistic knowledge	**Fluent**: English; **Intermediate**: German, Hindi; **Native**: Tamil
Soft Skills	Leadership, multi-tasking, Decision making

Accolades and Recognition

4th Runner up of ATMOS'19: BITS Pilani, Law follower, Tech-Management Fest

Winner of Currents'20-NIT Trichy: Placed 1st in the event "Autonomous Line Follower".

Winner of Kurukshetra'20-College of engineering, Anna university: Placed 1st in "Robozest".

Placed in **top 100** teams in the event Flipkart Grid 2.0: Placed as the 73rd team all over India in Round 1.

Best Concept Prize by Precimech Components and co.: Received a special award for designing the best fixture.

Personal Projects

RC Drone with aerial mapping   **July 2018**

Developed an RC Drone with image processing capabilities, which tracks a person's motion and draws a bounding box throughout his motion.

Ablution Assist for Elderly and Disabled   **April 2019**

Designed an advanced manual Rollator for elderly and disabled people, equipped with Arm-Rests and Cutouts, which will help them in their morning ablutions.

Robust Chest X-Ray Detection architecture   **Sep 2019**

Built a deep learning model, detecting 14 chest-related diseases with a dataset accrued from NIH. It was trained with the help of the Mobile Net pre-trained model and data augmentation.

Autonomous Stair Climbing Robot for delivery of packages   **May 2020**

Upon placement of the payload, the robot will climb the stairs while carrying it. The process is automatic, once address and map of the place is given. The robot is best suited for urban environment.

Competition-Based Robots

Designed and built Intelligent Ground Vehicles, Planetary Aerial Systems, Can-Satellites, Law Following Robot, Sumo Robot, and Battle Bots with my team (Atom Robotics).

Extra-Curricular

President of Atom Robotics, VIT Chennai

The official team of VITCC Robotics Club, which conducts workshops, events, and symposiums.

Member of National Service Scheme

An active member of the NSS club, who coordinates the various social service activities with a group of volunteers.

Member of IEEE Robotics and Automation Society

An active group coordinating member of IEEE-RAS.

Core Committee of team Vibrance'20

Worked as part of a team in-charge of Hospitality Management.

Declaration

I, **Nishanth Rajkumar**, hereby affirm that the aforementioned statistics is true to my knowledge, as of Mar 29th, 2021. References are available on request.