KUSHAL SAINI

Department of Electronics and Electrical Communication
B-311, Radhakrishnan Hall of Residence
IIT Kharagpur, Kharagpur, West Bengal - 721302
Email: kushalsai2007@gmail.com | Mob: +91 7838076187, 7478082999
Website: https://kush23.github.io/profile/

EDUCATION

YEAR	EDUCATION	INSTITUTION	CGPA
2020	B.Tech in Electronics and Electrical Communication Engineering	**Indian Institute of Technology, Kharagpur**	6.67/10
2016	*CBSE Class 12th*	**Rajkiya Pratibha Vikas Vidyalaya**	91.8%
2014	*CBSE Class 10th*	**Rajkiya Pratibha Vikas Vidyalaya**	9.8/10

COURSEWORK INFORMATION

Computer Sc.: Programming and Data Structures, Machine Intelligence and Expert Systems, Data Analytics, Digital Image Processing
Mathematics: Probability and Stochastic Processes, Matrix and Linear Algebra, Numerical Methods
Electronics: VLSI Engg, Digital Signal Processing, Microcontroller and Embedded systems, Semiconductor Devices, Analog Electronic Circuits, Analog Communication, Digital Electronic Circuits, RF and Microwave Engineering, Control Systems Engineering

SKILLS

Languages and Software Tools: C, C++, Python, Java, TensorFlow, Keras, SQL, JavaScript, HTML, PHP, MATLAB, Verilog
Frameworks: Angular, Django, Django REST Framework, Flask web framework, Node JS, Express.js, MEAN stack, Bootstrap
Cloud Platform and Database: Google Cloud Platform, AWS, Firebase console, Docker, Mysql, MongoDB, Postgresql
CAD Tools: Eagle CAD, LTSpice, TinaTI
Os: Windows, Linux **Version Control System:** Git

PROJECTS AND INTERNSHIPS

SOFTWARE DEVELOPER | RISHTEYHIRISHTEY.IN | URBAN PENDU PVT. LTD. **Aug 2019 - Sep 2019**
Environment: Flask web, MongoDB, Python, Javascript, AWS EC2
•Developed backend for Progressive Web App using Flask web-framework and MongoDB tested for Web, Android app.
•Successfully automated the push-notification System in the web app to increase the interaction with the client-side.

IOT DEVELOPER | UAV NETWORKS FOR REAL-TIME SURVEILLANCE | IIT KHARAGPUR **Sep 2019 - Oct 2019**
•Created a mesh network communication between raspberry pi to establish networking protocols and tested it between 5 drones.
•Developed a data transfer system using Raspberry pi and CAM to share the data directly to the ground station from the drone.
•Code the script to auto-switch network between client and access point to improve the efficiency of data transfer.
•Currently Analyzing and implementing research papers on optimising the position of drones to increase networking between them.

OPENSOFT | IIT KHARAGPUR **Mar 2019**
•The problem statement was to design an NLP based Search Engine for browsing past cases (Supreme Court) useful for Lawyer.
•Developed the backend using the Flask web framework and integrated it with the search engine model and frontend.
•Search time under 2 seconds and we were awarded gold thus acknowledging the quality of our search results.

FULL STACK DEVELOPER | P2 POWER SOLUTIONS PVT. LTD. **May 2019 - Jul 2019**
Environment: Angular, Django RestAPI, Bootstrap, HTML, SCSS Mysql, AWS deployment
•Developed backend and database management system in Django rest-framework and MySQL for Web, Android and IOS app.
•Incorporated a Ticket Management System in the web app to optimise the overall tracking of client enquiries.
•Formalized a Login Architecture to regulate the granting of 4 different types of permission levels to 3 categories of users.
•Deployed the web app on AWS console using an EC2 and RDS instance for testing purposes.

VLSI ENGINEERING Lab-EC39004 , MINI PROJECT **Mar 2019 - Apr 2019**
Designed a Single Precision Floating Point Adder according to IEEE 754 standard using Verilog.
•Designed a floating-point adder that takes two 32 bit single precision floating point input values that come serially with a time difference of 8 clock cycles between two inputs and stores the resultant value into RAMs.
•The functionality of the architecture is verified by writing Verilog code using Structural style of modelling and performing post route simulation on FPGA for 8 sets of input.

ANDROID DEVELOPER | LEANDIGIT TECHNOLOGY SOLUTIONS PVT. LTD. **May 2018 - Jun 2018**
Environment: Android Studio, PHP, MySQL, Python, Google Cloud Console
•Participated in a 5-day long orientation program about Lean manufacturing with waste minimization.
•Developed a process pipeline monitoring Android app using Android Studio (JAVA) for inventory optimisation.
•Developed the backend using PHP and MySql and deployed the program on google cloud console for testing and development.

EMBEDDED SYSTEMS AND SOFTWARE | AUTONOMOUS UNDERWATER VEHICLE **Feb 2017 - present**
•Developed a Battery management system that helped in improving fault detection by 10% hence increasing system efficiency.
•Build and calibrate Gripper for underwater object picking bot using ROS platform with Arduino and servo motors.
•Used Proteus and TINA TI for performing the simulations for scaling of the Kill Switch and Hydrophones Amplifiers.
•Proposed and created PCBs to improve the spatial efficiency and reduce noise in Kraken3.0, AUV's NIOT qualifying bot.

AWARDS AND ACHIEVEMENTS

•Qualified for the award of scholarship in Cass VIII **National Talent Search Examination** 2012 conducted by N.C.E.R.T.
•Selected in the Preliminary Design and Conceptual Design of the 6th National Competition on **Student Autonomous Underwater Vehicle**

EXTRACURRICULAR ACTIVITIES

•An integral part of the Gold winning team of Radhakrishnan Hall of residence in Inter-Hall Rangoli 2016 - 2019
•Part of the sets design and backdrop unit of the Bronze winning Inter-Hall Choreography team in 2018
•Member of the Gold winning Interhall open soft team in 2016-2017 and 2018-19
•Awarded Best secretary for session 2017-18 (Cultural) at RK Hall of Residence IIT Kharagpur