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Sagar Bhure

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Education

July '17	Dual Degree (B.Tech-M.Tech), Aerospace Engineering, Indian Institute of Technology, Kanpur	PG: **8.5/10** UG: **6.6/10**
June '11	12th, Central Board of Secondary Education, Delhi Public School, Durg, Chhattisgarh	**92.00**%
June '09	10th, Central Board of Secondary Education, Hasdeo Public School, Champa, Chhattisgarh	**78.00**%

Scholastic Achievements

- **Among top 3 students** from India to get selected for **UTokyo-IIT Summer Internship Program** 2015 for internship at UTokyo
- Among **winning top 4** projects in first global **PTC Hackathon 2018** by the office of CTO in the field of **Artificial Intelligence**
- Awarded for contribution towards first production release of **Creo Simulation Live** introducing new real-time simulation
- Secured **AIR of 216 amongst 0.5 million** students in ISAT conducted by Indian Institute of Space Science Technology(IIST)
- Secured **International Rank 1444** (among 97 other countries) in International Math Olympiad Organised by Homi Baba Centre

Work Experience

Senior Engineer, Qualcomm *Aug'19-present*
Multimedia Display, Hyderabad India

- Worked on Demura development towards HIDL binderized ipc of correction data from server of display panel replacement
- Have sound understanding of algorithms such as local tone mapping, Adaptive backlight adjustment and Game Color Plus

Software Specialist, PTC Softwares(India) PVT. LTD. *July'17-Aug'19*
Graphics, Systems Tools India

- Responsible for Pro/Engineer graphics development and undertaking projects for the newer version of Creo/ProE
- Undertaken Research and Innovation project to detect orientation in the field of Artificial Intelligence(refer projects section)
- Improved performance of animation playback by 40% without invalidating display-list, first epic to go into Creo 6.0
- Creo 6.0 project to allow model names to contain characters allowed in names of foreign CAD models(refer projects section)
- Managed Graphics integration of **Ansys Live in Creo 6.0** to display simulation results in graphics window (refer projects)

Master's Thesis

Dispersion analysis of CNT/Epoxy composites and architecture of porous scaffold using Digital Image Processing *May'16-July'17*
Prof. Sudhir Kamle, Department of Aerospace Engineering, IIT Kanpur

- Aimed at developing an algorithm to successfully predict the quantitative properties of porous material using OpenCV
- Developed an algorithm to predict the presence of throat in closed contour which was used to evaluate inter-connectivity
- Developed an algorithm that to predict the porosity of of a porous material, i.e. scaffold in our case
- Successfully predicted the practical application of scaffold based on the quantitative properties calculated in previous steps

Internships

Research Intern, UTokyo-IIT Intership Program *June'15-July'15*
Prof. Jun Takahashi, University of Tokyo, Japan

- This internship was conducted at department of systems innovation and being **sponsored by DMG MORI Co. Ltd. Japan**
- Established a **breakthrough mix of Re-T800 fibers & Re-T300** fibers into sandwich structure to reduce Environmental burden
- Data analysis of the results obtained from testing program was done in **Matlab & Excel**, thus completing the research objective
- **Appreciated as best intern** in Department of Systems Innovation for identifying the area of growth in carbon fiber recycling

Summer Intern, Ashok Leyland, Pantnagar Uttarakhand *July'14*
Mr. Mayank Kukrety, Manager, Ashok Leyland

- Variation of Wheel Alignment Parameters and Sources of Variation of Ashok Leyland for its commercial vehicle (CV) segment
- Developed a prototype to fix thrust angle of CV's, which was later used to **fix thrust angle of 40 CV's** that had **ran for 3000 km**
- **Adjudged as best designed** amongst interns, the prototype was refereed to Ashok Leyland's R&D centre, Chennai

Mathematics Tutor, Prayas, IIT Kanpur *May'17-June'17*
Mr. Saurabh Sinha, Prayas, IIT Kanpur

- Prayas is a student's organization involved in educational activities for underprivileged children around the campus of IIT-K
- Taught basic and advanced mathematics to more than 20 students of Higher Secondary over the period of 2 months

Position of Responsiblity

Aerodynamics President *July'13-June'14*
Formulae Student Car, IITK Motorsports (Sponsored Project, Budget: 4.5 million)

- Lead a team of 13 students to develop a full-fledged Aerodynamics for our race car to compete internationally at **FSAE ITALY**
- Instituted 'Aero', developed documentation and CAD to **reduce drag by 14.4%** and increase **fuel efficiency by 9.5%**
- Introduced carbon fiber, manufactured bodyworks and seat **reducing weight by 80%**, thus increasing the **max speed by 60%**
- Team stood 9th in design event, 13th in Business presentation, **33rd overall** out of 72 international teams at FSAE'13 Italy

Teaching Assistant *Jan'17*

Engineering Graphics, Department of Aerospace Engineering, IIT Kanpur

- Assisting the instructor in smooth conduction of course work consisting of more than 500 student
- Proposed Animated SVG method of providing solution for better understanding of 3d drawing
- Responsible for organizing, conducting, and grading the quizzes for students and maintaining student score

Coordinator *July'14*

Gearloose, Takneek Science and Technology Council, IIT Kanpur

- **Managed 24 Participating** teams from 10 different hall of residence in Inter-IIT competition
- **Spearheaded operations** by recruiting and leading a three-tier team of **11 secretaries** and **20 volunteers**
- As Coordinator, introduced an arena for **"All Terrain Land & Water Stunt Machine"** within stipulated **budget of INR 80K**
- **Increased** the number of participating teams **from 2% to 15%** ,Introduced Gearloose in Techkriti'13 (technical festival) of IITK

Executive *Jan'13-Mar'13*

Alumni Contact programme (Dean of Resource and Alumni, IIT Kanpur)

- Arranged grants of **INR 4.5lac** from Alumni towards various research activities & Institute Infrastructure Development
- **Managed a team of 23 undergraduate** students for organizing **Alumni Reunions (USA Chapter)**, Institute Workshops
- Worked with a **team of 15 Executives** for communicating with Alumni & informing them about Alumni Gift Program (AGP)

Projects

Demura Development for Android Display *Nov'17-Feb'18*

Mr. Prashant Nukala, Qualcomm Hyderabad

- Project aimed towards feature development of demura feature.

Markerless Pose Detection Using Artificial Intelligence *Nov'17-Feb'18*

Mr. Prashant Prabhakar, PTC Software's Pune

- Project awarded as one of the top 4 winning projects in global PTC Hackathon 2018 by CTO office
- Training data sets were generated around 360 degrees along X-Y axis for various CAD models
- To develop trained neural network used techniques such as CNN which was built on tensorflow, Genetic optimising algorithm
- Genetic optimising algorithm and Convolutional Neural Network were used to train network
- Successfully predicted the arbitrary orientation of an object in 3D-space from images without the use of markers

Graphics Integration of Ansys Live in Creo 6.0 *Sept'18-Feb'19*

Mr. Prashant Prabhakar, PTC Software's Pune

- Undertaken Creo 6.0 project to provide OepnGL callbacks required for graphics integration towards Creo Simulation Live (CSL)
- Creo Simulation Live is a tool coming to **Creo CAD software** that lets engineers perform **simulation in real time** on parametric model
- Awarded with an **Excellence Cup** for providing solutions to issues faced during design and verification phase of CSL development

AI Model to detect the crack Defect and Deploy the model on Smartphone/Cloud *May'19*

- Predicted the quality of a given sample(Healthy/Defect) with the validation accuracy of 93.55% and deployed in my smartphone
- Small Dataset, so training from scratch might not give good accuracy, so the concept of Transfer Learning as used for training
- The application has an integrated camera which take images and uses TensorFlow library on the app to classify images

Case Study on Safe-Life Estimation of Light Aircraft *May'16-June'16*

Prof. Prakash Mangalgiri, Indian Institute of Technology, Kanpur

- **Estimated safe-life** of Light Aircraft using **Federal Aviation Administration Report** AFS-120-73-2 & Advisory Circular(23-13A)
- **Data analysis** of various load spectre obtained from mentioned reports were done in **Matlab & Microsoft Excel** software
- **Proposed** a solution to **increase safe-life(1000 flight hours or 2%)** using Damage Tolerance evaluation under metallic fatigue

Challenges Faced by Kanpur Leather Cluster *May'14-June'14*

Prof. Uday S. Racherla, Department of Master of Business Administration **(MBA)**

- Conducted seminars among **450 tannery** workers to create awareness about govt. initiatives like employee state insurance
- Estimated **risk of exposure related diseases in R** using the data obtained from 25 tanneries & other staff members
- Proposed effective solutions to improve medical condition of tannery workers in the cluster on the basis of information gathered

Extra-Curricular Activities

- Awarded Scholarship for securing 1st position in Class 12th among 400 students in Delhi Public School.
- Awarded with Markers Cup for Proficiency in Chemistry in grade 12th among 400 students.
- Awarded Gold Medal in Josh 2013 for Snatch, Squat Bench Press in Weight-Lifting Open Category
- Part of Successful Attempt for Guinness World Record for solving Rubiks Cube in Techkriti-2013
- Awarded with Gold medal for winning Intra PTC Cricket tournament 2019 Held at Azam Khan Sports Academy

Skill Set

Programming Languages	C++, Python, R, MATLAB, C, OpenGL, Android HAL
Other Interest	Content Writing, Website Development, Debugging
Software Tools	Tensorflow, Android Studio, MATLAB, Visual Studio, Tecplot, RTOS, 3ds Max