

ANOUSHKA GUPTA

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EDUCATION

Indian Institute of Technology Delhi

Jul. 2018 – Aug. 2022

Bachelor of Technology in Mechanical Engineering with Minor in Entrepreneurship

CGPA: 8.71/10

SCHOLASTIC ACHIEVEMENTS

- **Suresh Chandra Memorial Trust Award, IITD Convocation'22:** For best B.Tech. thesis in Mech. Engg.
- **IITD Semester Merit Award:** Granted for securing department rank among **top 7%** in 1st semester 2021-22
- **IRD Design Challenge Winner:** Selected in **top 5** out of 100+ teams; Awarded **10,000 INR** by IIT Delhi
- **Mastercard Design Thinking & Innovation Challenge Finalist:** 1 of **top 8** teams among 100+ students
- **IIT-AIIMS Biodesign Delegate:** 1 of **top 15** students selected from IIT Delhi for biodesign workshop 2019
- **SAT Subject Tests, USA: 2390/2400** with **800/800** in Math Level II and Physics, **790/800** in Chemistry
- **KVPY Fellowship:** Selected amongst 0.15 million applicants for fellowship by IISc Bangalore and DST, GoI

RESEARCH EXPERIENCE

Influence of Implant Design on Jaw Fracture Repair

Aug. 2021 – Nov. 2022

Advisor: Prof. Kaushik Mukherjee

Department of Mechanical Engineering, IIT Delhi

- Developed finite element model simulating both soft & hard tissues with non-linear contact from CT data
- Assigned biologically realistic material properties and boundary conditions to mimic chewing cycle
- Implemented MATLAB routines for post-processing & iterative bone remodeling algorithm in batch-mode
- Evaluated 5 implant designs of 5 materials & interpreted **10+** parameters to suggest fixation improvements

OTHER PROJECTS

Prosthetic Hand with Haptic Feedback

May 2022 – Aug. 2022

Advisor: Prof. Biswarup Mukherjee

Centre for Biomedical Engineering, IIT Delhi

- Built a working prototype for by-pass socket: Designed CAD models and used 3D printing for fabrication
- Designed experiment setup and tasks for non-amputees fitted with prosthetic hand through by-pass socket

Molecular Dynamics Simulation of Silicon Carbide

Dec. 2020 – Jan. 2021

Nanomechanics Course Project, Prof. Devendra Dubey

Department of Mechanical Engineering, IIT Delhi

- Performed atomistic modelling of nanoscale Silicon Carbide using numerical computations in LAMMPS
- Computed modulus and anisotropic properties of Silicon Carbide at different boundary conditions

Design of Bioinspired Tools

Apr. 2020 – Jul. 2020

Inclusive Innovation Course Project, Prof. A Sagar, Prof. PVM Rao

Department of Design, IIT Delhi

- Conceptualized handy and easy-to-assemble tools to help enhance fine motor skills of school children
- Developed biomimetic prototypes and validated tools with children and BM Mental Health institute

Detection of Jugular Venous Pressure (JVP)

Jun. 2019 – Jul. 2019

Summer Biodesign Workshop Project, Prof. N Singh, Prof. PVM Rao

IIT Delhi and AIIMS Delhi

- Designed solution to reduce inter-observer variability in JVP detection for management of heart failure
- Worked with 5+ clinicians and doctors detecting JVP and empathised with difficulties faced by them

COURSEWORK

Mechanical Laboratory
Biomedical Engineering
Computing

CAD and FEA, Machine Design, CAM and Automation, Material Science
Tissue Engineering, Healthcare Wearables, Nanomedicine, Intro. to Biology
Data Structures & Algorithms, Statistics, Numerical Methods & Computations

TECHNICAL SKILLS

Softwares ANSYS, Materialise MIMICS & 3-Matic, Autodesk Inventor, Solidworks, LAMMPS, VMD
Languages Java, C++, Python, MATLAB, L^AT_EX, ANSYS APDL, HTML/CSS, SQL

PUBLICATIONS

• Conference Abstracts:

- **Gupta A., Dutta A., Mukherjee K., Influence of plate design on subcondylar fracture fixation: a comparative finite element analysis**, 27th Congress of the European Society of Biomechanics, 26 - 29 June 2022, Podium Presentation, [[Link](#)]
- **Gupta A., Dutta A., Mukherjee K., Influence of materials in fixation of mandibular subcondylar fracture: an in silico assessment**, Orthopaedic Research Society Annual Meeting 2023 (*Accepted*)
- Singh G., Shah K. (co-first authors), **Gupta A., Dutta A., Mukherjee K., Periprosthetic bone adaptation in mandibular subcondylar fracture fixation: a numerical investigation**, Orthopaedic Research Society Annual Meeting 2023 (*Accepted*)
- Ghosh R., **Gupta A., Dutta A., Khandelwal G., Roychoudhury A., Mukherjee S., Chawla A., Mukherjee K., Biomechanical evaluation of narrow TMJ implant**, 18th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering (*Under review*)

• Journal Articles:

- **Gupta A., Dutta A., Dutta K., Mukherjee K., Biomechanical influence of plate configurations on mandible subcondylar fracture fixation: a finite element study**, [[Pre-print link](#)] (*Submitted*)
- **Gupta A., Dutta A., Mukherjee K., Comparative biomechanical investigation of plate materials and geometries for subcondylar fracture fixation: Numerical predictions** (*Under preparation*)

WORK EXPERIENCE

- Design Engineer, Boston Scientific, Pune R&D, India Dec. 2022 – Present
 - Examining design, safety performance and regulation requirements of medical devices in urology division
 - Conducting design change analysis & remedying design history files in compliance with the requirements
- Project Associate, OYO Hotels and Homes, Gurugram, India May 2021 – Jul. 2021
 - Identified **3 opportunity areas** of high user drop-offs and initiated 3 targeted notification campaigns
 - Conducted root cause analysis & achieved 20% improvement in key business metrics by enhancing UX
 - Received **Pre-Placement Offer** & Letter of Recommendation based on the performance across projects

POSITIONS OF RESPONSIBILITY

- **Design & Publicity Coordinator, Student Incubation Cell** Sep. 2020 – Mar. 2021
 - Led **team of 8** for UI/UX design and development of website for startups founded by IIT Delhi alumni
 - Launched social media campaigns for startup insights & generated two-fold increase in impressions
 - Coordinated **team of 12** for first issue of magazine with articles from alumni, founders & professors
- **Technical Editor, Board for Student Publications** Aug. 2019 – May 2020
 - Contributed to design of **10+ pages** in print magazines and creative blog website of BSP and BRCA
 - Penned annual fiction compilation & contributed to journalistic articles with reach of 1000+ students
 - **Activity Head, Literati**: Conducted events & designed posters for 350+ participants of literary fest

EXTRACURRICULAR ACTIVITIES

- **Sports**: Won 6 national level medals for IIT Delhi in Table Tennis & organised first-ever girls' cricket tournament
 - **Silver Medal**, 53rd Inter IIT Sports Meet held at IIT Guwahati (2018)
 - **Silver Medal**, 54th Inter IIT Sports Meet held at IIT Bhubaneswar, led as the vice-captain (2019)
 - **Gold Medal**, Inter Hostel General Championship, led as the captain (2020)
 - **Silver Medal**, Breeze, SNU Noida (2019) | **Gold Medal**, BOSM, BITS Pilani (2018)
 - **Silver Medal**, Aahvan, DTU Delhi (2020) | **Gold Medal**, Sportech, IIT Delhi (2019)
- **Music**: Awarded **Distinction** in the initial 3 grades of Keyboard exams by **Trinity College of London**
 - **2nd position**, Kailash Music events (2019) | Keyboardist in annual 4&1/2 Battle of Bands, IITD (2019)
- **Social Endeavors**: Organized International Conference on Safer Mobility at IIT Delhi with 1000+ audience
 - Coordinated with relevant startups, delegates, sponsors and media partners for 5 partnership deals
 - Delegated in 5-day immersion trip to Bareilly, UP to understand ground level developmental issues