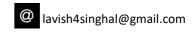


LAVISH SINGHAL

Biochemical Engineering

JCB Hall, IIT Kharagpur Kharagpur, India







EDUCATION			
Year	Degree/Exam	Institute	CGPA/Marks
2022	B. Tech and M. Tech (Dual Degree)	IIT Kharagpur	8.42 / 10
2017	CBSE	Vishva Bharti Public School	92.4%
2015	CBSE	Spring Fields Public School	10 / 10

COURSEWORK INFORMATION

- Probability and Statistics
- Python Data Structures
- Economics
- Bioinformatics
- Algorithms
- Techno-Entrepreneurial Leadership
- Partial Differential Equations
- Stock Market Basics (Varsity Zerodha)
- Neuronal Coding for sensory information

- Programming and Data Structures
- Python and Statistics for Financial analysis
- Genomic Data Science and Clustering
- Technical Market Analysis (Varsity Zerodha)
- Trading Basics (ISB)

WORK EXPERIENCE

Stock Market trading | Personal Portfolio Management | ICICIDIRECT | ZERODHA

- Actively managing seven-figure portfolio of stocks through long term investment based on fundamental analysis and Intraday square-offs based on technical analysis.
- Studied Candlestick pattern, financial statements, Pricing models (CAPM, APT), implemented Ichimoku clouds, Fibonacci retracement, Piotroski F –score indicators and have generated ROI of 10.8% in just 3 months.

INTERNSHIPS AND PROJECTS

Genome Scale Metabolic Reconstruction and in-silico metabolic analysis

Supervisor: Dr. Amit Ghosh | Department of Energy Science and Engineering | IIT Kharagpur (May 2020 – July 2020)

- Preparing Genome Scale Metabolic Model of Geobacillus LC300 leveraging modelSEED, COBRApy, MATLAB and COBRA Toolbox v3.0.
- Performed Manual curation using COBRApy, Pandas and Numpy libraries to rectify reversibility bounds, charge.
- Computational Techniques learned: RAST Server and modelSEED for Draft reconstruction model, COBRApy, Python for Data Science, COBRA Toolbox v3.0
 - Github link: https://github.com/lvis4/genome_model.git

Deep biosphere Database and Computational analysis of phylogenetic potential

Supervisor: Dr. Pinaki Sar | Department of Biotechnology, IIT Kharagpur (Dec 2019 –Jan 2020)

- Creating a database for the microbial consortia present in the deep biosphere, approx. 3000m below the earth's surface.
- Data mining FASTA files of raw sequences of the 16s rRNA amplicon sequence from the NCBI database.
- RNAseq Data Analysis using EXCEL for statistics for comparative analysis.

Techno-economic analysis and Scale-up Studies for efficient bio-ethanol production

Supervisor: Dr. Rintu Banerjee | Department of Agriculture and Food Processing, IIT Kharagpur (May2019–July2019)

- Developing strategies for optimization of lignin degradation, hydrolysis and fermentation for ethanol production from lignocellulosic biomass.
- Developing strategies and innovative solutions to build a circular bio-industry and performed Techno-economic analysis and scale-up analysis to understand the feasibility of scaling up of the technology.
- Significant achievements and outcomes:
 - Established pilot scale proof of concept and presentation of results.

COMPETITION/CONFERENCE

University Challenge | India Innovation Growth Programme (IIGP 2.0) (June 2019)

- Ideated a biosensor for latent TB detection using a Lateral Flow assay integrated with aptamers designed specific to LTB antigens.
- Built Financial Model, Roadmap, Business Model, performed Market Analysis and Scale-up strategy, for large-scale implementation of our product.
- Among top 40 teams in the University Challenge IIGP 2.0 organized by Department of Science and Technology (DST), Government of India, Lockheed Martin and Tata Trusts.

• Represented **IIT Kharagpur** in the downselect competition held at **IIT Bombay**.

Product Design | General Championship | IIT Kharagpur

- Ideated a Sound based Fire Extinguishing Drone inspired by research conducted by DARPA.
- Served as Product Design Captain for the JCB Hall team and prepared a structured report and presentation for the team.

8th SOF International Mathematics Olympiad 2014

 Secured International Rank 246 in the final round of 8th SOF International Mathematics Olympiad in February 2015.

SKILLS AND EXPERTISE

Design software SOLIDWORKS 2016, MATLAB, ADOBE Photoshop CS6

LANGUAGES C, C++, python, R, HTML, CSS

Platforms and IDE Ubuntu 16.04, Benchling, PyMOL, MEGA-X, Jupyter

POSITIONS OF RESPONSIBILITY

Head | Student Welfare Group -SWG, IIT Kharagpur (April 2019- Present)

- Leading a team of 44 Members to address prominent student issues related to quality of on-campus student life.
- Organizing Campus-wide events like 'Campus tour', 'Welcome fresher' and Student Mentor Program for Freshers,
 Foresight for students to connect them to Alumni for guidance.

Core Team Member | Technology Adventure Society - TAdS, IIT Kharagpur (Aug 2018-March 2019)

- Organizing and managing adventurous, adrenaline-rich activities like 'Adventure Weekends' in campus.
- Organized, managed and successfully completed a Winter Trek to the Himalayas.

AWARDS AND ACHIEVEMENTS

Holding Department rank 3.

Secured a percentile of over 99.7% in IITJEE ADVANCED 2017 given by over 13,50,000 aspirants.

EXTRA CURRICULAR ACTIVITIES

- Served as a volunteer in the National Service Scheme (NSS) (2017-2019) and won GOLD in the Annual Winter Camp held by NSS.
- Participated in Socio-cultural event 'Nukkad Natak' organized under Open IIT competition, IIT Kharagpur.