PARIKSHIT GHOSH

Final Year Undergraduate
Department of Chemical Engineering, IIT Kanpur

Email: paghosh@iitk.ac.in
Phone: +91 848-798-2772

EDUCATIONAL QUALIFICATIONS

YEAR	QUALIFICATION	INSTITUTION	PERFORMANCE
2019-2023	B.Tech. CHE (Major), IME & HSS (Minors)	Indian Institute of Technology Kanpur	**8.3**/10.0
2019	CBSE (XII)	Green Valley High School, Vadodara	89.6%
2017	CBSE (X)	Shree Swaminarayan Gurukul, Vapi	10.0/10.0

SCHOLASTIC ACHIEVEMENTS

- Obtained **Pre-Placement Offer (PPO)** from **Dr. Reddy's Laboratories Ltd.** post completion of Internship *2022*
- Secured **AIR 3129** (in common merit list) in **Joint Entrance Examination Advanced** among 200,000 candidates *2019*
- Secured **AIR 4329** (in common merit list) in **Joint Entrance Examination Main** among 1.2 million candidates *2019*

PROFESSIONAL EXPERIENCE

Design of SKID for Complex Injectables *May – July'22*

Summer Internship, Integrated Product Development Organization (IPDO) Unit, ***Dr. Reddy's Laboratories Ltd., Hyderabad***

Objective	• To discern the issues **stagnating the operation** and **proposing modifications** to conclude the impending **SKID design**
Approach	• Explored the working principle of **reactor**, **agitator**, **valve**, **steam trap**, **pipe sizing**, **SIP and CIP process** and also investigated the process equipment to establish a **framework** to increase the infallibility of the **process flow diagram** • Employed **AutoCAD** software to depict the **piping and instrumentational diagram** of the existing process installation • Scrutinized the functioning of **apparatus** and applied **pipe sizing** to reaffirm the measurements of the process channels
Outcome	• Identified the **critical valves** beneath the reactors that require **automation** to completely digitalize the operation • Incorporated changes like addition of **pressure** and **flow sensors** in **thin film evaporator** to finalize the SKID design

PROJECTS

High Speed Granular Chute Flows *Jan'22 – Apr'22*

Undergraduate Project || *Prof. Anurag Tripathi*

Objective	• To analyze the critical properties of **high-speed** sand particles flowing through an **inclined chute** in its **steady** state
Strategy	• Traversed the critical concepts such as **Newtonian** & **Non-Newtonian** fluids, **Cauchy Momentum** equation, **Power law**, **Navier Stokes** equation, **Constitutive** relation, **initial** & **boundary** conditions necessary for the trial analysis • Worked on **Continuum Simulation** approach wherein a velocity relation is worked out by eliminating other unknowns • Applied numerous solvers like **ode15s** and **pdepe** to work out the **stiff** velocity relation and then obtain its final values
Impact	• Explored the vastly uncharted field of **Granular Materials** and verified the velocity relation for high-speed chute flows

Stock Prediction using Q-Learning Agent (*Semester Projects '21, Finance & Analytics Club, IITK)* *May'21 – July'21*

- Traversed the **Deep Q-Network** and implemented **Xgboost** model to predict whether the stock prices would go up, down or sideways
- Achieved a **RMSE** of **1.3** and **MAPE** of **0.893%** for Xgboost, making it more precise than **Linear Regression** and **Moving Average**
- Attained a profit of 77 USD over a span of 2264 days for the company named 'Clorox', signifying its potential for **long-term gains**

Risk and Returns: The Sharpe Ratio *(Self Project*) *Dec'21 – Jan'22*

- Scrutinized the crucial financial terms like the **risk/return** measure, **S&P 500** index and the reward to variability ratio (**Sharpe ratio**)
- Computed the ratio of **average excess returns** and **standard deviation excess** returns of Amazon and Facebook for the year 2016
- Deduced that **Amazon** had a Sharpe ratio twice as high as **Facebook**, i.e., investment in Amazon in 2016 yielded twice as much return

Currency Exchange Rate Prediction *(Self Project*) *Dec'20 – Jan'21*

- Examined the financial terms such as the **Financial Markets**, **Currency Exchange Rate** and US dollar-Indian rupee exchange rates
- Predicted the currency exchange rate for the next five days using **Decision Tree Regression** algorithm to gauge the overall trend
- Observed that the **dollar-rupee** exchange rate varied from ₹79.155 on present day to ₹74.191 on fourth day, with a declining trend

POSITIONS OF RESPONSIBILITY

Mentor, Chemineers Society, IIT Kanpur *June'21 – July'22*

Mentorship	• Spearheaded the project '**Computational Thermodynamics and Heat Transfer Devices**' consisting of **15 students** • Illustrated the concepts such as the **Eq. of State**, **Departure Function**, **Fugacity, Conduction** and **Heat Exchangers**
Impact	• Established a **core foundation** for upcoming Students to pursue further research/experience in these advance disciplines

Senior Election Officer, Election Commission, IIT Kanpur *June'20 – May'21*

- Acted as the **regulating body** along with secretaries, **core-team** & other **senior officers** to ensure smooth conduction of election process
- Ensured that **no foul play** was committed by participating Candidates to maintain the **dignity** and **decorum** of a **free** and **fair Elections**

RELEVANT COURSES

**: A grade; ^: Will be completed by Nov '22; ": Online Course*

- **Data Analytics** – Fundamentals of Computing, Computational Methods, Mathematical Methods^, Mathematics-I, Mathematics-II*
- **Finance** – Financial Engineering^, Supply Chain Management^, Reinforcement Learning in Finance", Fundamentals of ML in Finance"

SKILLS

- **Software/Programming** – C/C++, Python, MATLAB, HTML, CSS, JavaScript, COMSOL, DWSIM, MySQL, GNU Octave
- **Utilities/Libraries** – AutoCAD, Pandas, Numpy, Matplotlib, Scikit-learn, Pytorch, Django, Git, LaTeX, MS Office

EXTRA-CURRICULAR ACTIVITIES

Social	• Administered the smooth conduct of **India Water Impact Summit, 2019** under the supervision of **Prof. Vinod Tare** • Worked alongside **25 volunteers** to allot the **ID cards** and escort the **foreign delegation** to the **IWIS Summit, 2019**
Cultural	• Conducted ***Happy Hours*** for CHE **freshers** to enjoy and get acquainted while having *chai-nashta* with the **faculty**