Aryan Agal

Energy Science and Engineering

Indian Institute of Technology, Bombay

16D170004

Dual Degree (B.Tech. + M.Tech.)

Gender: Male

DOB: 30-04-1998

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2021	▓▓▓

- Minor in **Computer Science & Engineering** (CS)
- Heyning-Roelli Foundation Scholarship recipient
- Academic Proficiency in Optimization (top 5%), Intro to CS (**top 0.85%**)
- 1 of 3 Indian students granted a semester exchange at EPFL

PROFESSIONAL EXPERIENCE

STANDARD CHARTERED | Risk Intern, Collections Strategy Team [MAY '19 – JUL '19]

Optimized customer targeting; Innovated new Collections & Recoveries Framework (CRF); Presented to India leadership

IMPACT	
	- Improved Personal Loans(PL) XDPD **targeted value** by **20%+;** Mitigated 600+ redundant calls
	- Targeted 8000+ risky PL Pre-X A/Cs, aiming to stop **INR 20 million+** from **delinquency** inflow
	- Operationalized PL Pre-X CRF over 5 bank departments, coordinating across teams in 3 cities
INITIATIVES	- Created a **new performance metric** to monitor PL XDPD CRF, in consultation with India team lead
	- **Clustered** PL Pre-X A/Cs basis 3 months performance data across balance & risk categories
	- Designed the Allocation Strategy & Treatment Plan for 60DPD Credit Cards for Project MARSHALL
	- Prototyped an **Excel dashboard** summarizing credit cards sourcing performance on 4 years data

KEY CODING PROJECTS

PREDICTING ATOMIC PROPERTIES | *Guide: Prof. Martin Jaggi, EPFL - Course Project - Machine Learning(EPFML)* [FALL '19]

- Utilized machine learning to achieve **3600x speedup** over electronic structure calculations for 19000 materials
- Implemented neural nets in PyTorch; **Cut down RMSE** by **55%+** & improved classification by 420 bps over baseline
- Achieved **90.2% accuracy** classifying conducting nature & RMSE of 0.83eV/atom estimating formation energies

MACHINE LEARNING(ML) FOR RAMAN SPECTROSCOPY | *Guide: Prof. Martin Jaggi, EPFL – Student Project* [FALL '19]

- Identified Raman spectrum phenomena in **13k+ samples** in noisy, low integration time & power settings with ML
- Implemented ResNet & Fully-Connected Nets(FCNs) in **PyTorch**; Cleaned outliers & applied Gaussian smoothing
- Demonstrated FCN's superiority over ResNet via **benchmarking**; Mentored 3 students in contributing to the project

MIXED INTEGER LINEAR PROGRAMMING IN UNIT COMMITMENT | *Guide: Prof. Zakir Rather – Course Project* [SPRING '19]

- Minimized unit operating costs, **10x faster** with 6% cost reduction over literature; formulated & linearized constraints
- Implemented a MATLAB GUI program to generate an **optimal unit schedule** given unit data & forecasted demand

IMPLEMENTING DIGITAL IMAGE PROCESSING ALGORITHMS | *Guide: Prof. Amit Sethi - Course Project* [FALL '18]

- Implemented algorithms to stitch flash & no-flash image pairs for **denoising**, **detail transfer** and white-balancing
- Wrote an algorithm for **toonification**; Coded the joint bilateral filter in **MATLAB**; Reproduced & presented our results

POSITIONS OF RESPONSIBILITY

CONVENER | Electronics & Robotics Club | Institute Technical Council [APR '17 – APR '18]

- Part of 10-member team conducting competitions, talks and discussions; Organized bootcamps w/**400+ attendees**
- Organized XLR8, with 500+ (**10% YoY growth**) freshers participating; mentored 50+ teams in the competition

EXTRA-CURRICULARS

MENTORING	
	- Institute Technical Summer Project Mentor for IIT Bombay ('18) & IIT Goa ('17) RPi projects
	- Guided IIT Dharwad tech enthusiasts in hands-on Arduino & coordinated their IITB lab visits
TECHNICAL	- Placed in **top 3** teams in IITB in the **Microsoft code.fun.do** AI for Social Good Online Challenge
	- Volunteer for Web & Coding Club ('17-'18); Conducted hackathons, workshops & competitions
	- Python Instructor, UGAC IITB (Summer '18) - Solved over **320** questions on LeetCode in **C++**
MOOD INDIGO	- Designed & developed Enigma (online clue hunt) on **MEAN** stack; received **1000+** signups ('17)
	- Created portals garnering **6.5 million+** hits yearly; managed a team of 50+ organizers ('17)
SPORTS	- Secured 1st place in intra-hostel basketball & intra-hostel football tournaments, Hostel 6 ('19)
MISCELLANEOUS	- Fulfilled 80 hours of Social Work (NSS) ('17) - Learned to play the acoustic guitar in lockdown
	- Organized CURED, a diabetes awareness - Article Lead, Insight Freshers' Newsletter ('18)

Scholastic achievements and extracurricular activities are not verified by the Placement Cell