Aryan Agal
Energy Science and Engineering
Indian Institute of Technology Bombay

16D170004
UG Second Year
Male
DOB: 30/04/1998

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2018	8.51
Intermediate/+2	HSC	Pace Jr. Science College, Dadar	2016	88.80
Matriculation	ICSE	St. Mary's School, Mazagaon, Mumbai	2014	93.33

Pursuing a minor in the Department of **Computer Science and Engineering**.

Scholastic Achievements

- Awarded **AP Grade** for exceptional performance in Computer Programming and Utilization, given only to 8 out of 1052 students who registered for the course in the academic year. *(2016-17)*
- Secured **All India Rank 1960** in **JEE Advanced 2017** among 150 thousand candidates *(2016)*
- Achieved **99.69** percentile in **JEE Main** among 1.5 million candidates *(2016)*
- Qualified for the Certificate of Merit in the All India Open Mathematics Scholarship Examination **twice**, for grabbing **61st** and **186th** position in the all India ranklist *(2011, 2013)*
  Institute for Promotion of Mathematics - IPM

Key Projects

Smart Mirror *May-June 2017*
Institute Technical Summer Project *IIT Bombay*

- Fabricated a setup to display useful information on a mirror using a **Raspberry Pi** and an LCD screen
- Localized, **fixed multiple bugs** and implemented the MagicMirror framework based on **Electron**, a JavaScript framework, on the RaspberryPi and customized CSS styling of the displayed elements.

Electronics and Robotics Club Website *May-June 2017*
Institute Technical Council *IIT Bombay*

- **Developed** a website for club activities and including technical blog posts, tutorials, and event reflections.
- Implemented the website with Jekyll, to make website easier to contribute to, with posts in **Markdown**.
- Setup **auto-deployment** on **TravisCI**, a Continuous Integration provider available in the GitHub marketplace.
- **Migrated existing content** of Electronics Club(2015-16) and Robotics Club(2015-16) websites and unified themes and layouts using the concepts of Jekyll

Wireless Input for Speaker *November 2016*
Electronics Club *IIT Bombay*

- Created a speaker attachment with an **ESP8266** module, to transmit music wirelessly to the speaker.
- Wrote **python** code to sample any audio file and connect to the module and **stream** it over the connection.

Main and Beta Websites *May-August 2017*
Team Creatives *Mood Indigo 2017*

- Contribute in development of Main and Beta Websites of Mood Indigo 2017 based on **AngularJS** Framework. Uses **Sass** scripting for styling and **BrowserSync** integration for ease of development.
- Implemented a music player using **angular-soundmanager2** and scroll-based animations using **Skrollr.js**
- Made the beta website cross-compatible through addition of responsive elements to it.

Traffic Light Control System *May-June 2017*
Motivated by Self Interest, taken up in a team of five *Transform Maharashtra, a government initiative*

- **Formulated** a **traffic handling** system, which controls traffic lights on the basis of number of vehicles present in each entry point of the intersection, using **image processing** on (CCTV) camera footage.
- Implemented logic for changing traffic signal times on the basis of number of vehicles found **Markdown**.

Technical Skills

Programming &	C++, C, Java, Python, LaTeX
Web Development	HTML, CSS, Bootstrap, JavaScript, jQuery, Jekyll, Django
Tools/Software	Android Studio, Git, Bash, GNU Octave, AutoCAD, Arduino, Raspberry Pi

Experience

- **Competitive Coding:** Applied basic algorithms to solve questions on multiple websites like SPOJ, Codechef, HackerEarth and HackerRank. Currently holds SPOJ rank **#7430** worldwide as of 27th September 2017.
- **Client Server Chat Application:** *Course assignment, under Prof Mythili Vutukuru*
  Created a **multi-client server program** using concepts of **Socket Programming** in C++ with **epoll**
- **Wrestle.AI:** Developed an **Arduino based bot** acting as a Line Follower, Wall Follower, Maze Path Finder and a wrestler; interfaced the Arduino with an **ultrasound** sensor and self-made **infrared** sensors
- **Android App controlled car:** Developed a remote controlled car which interfaces with an Android phone using an **HC-05** Bluetooth module
- **Solar Battery Charger:** *Course Project under Prof. Rangan Bannerjee*
  Assembled a solar battery charger, using an **LM317** voltage regulator IC to charge a 12V battery.

Positions of Responsibility

Convener at Electronics and Robotics Club *IIT Bombay* *April 2017-Present*

- Working with a 10 member team, to boost the institute's Electronics & Robotics culture through hackathons, bootcamps, lectures, competitions and group discussions like the upcoming series "How Things Work"
- Organized and mentored in XLR8, participated in by 500 freshmen and mentored 50+ bots in the competition.
- Managed and spoke at a four day spread boot camp on Arduino, Image Processing, PID theory, Basic Electronics, Motors and Raspberry Pi attended by 400 enthusiasts across the institute

Volunteer at Web and Coding Club *IIT Bombay* *April 2017-Present*

- Conducting events like hackathons, workshops, reflections, etc. of one of the largest programming clubs in India.
- Assisted in organizing several events, bootcamps and talks including ones on Git, Python and GitHub.
- Monitored 'Seasons of Code' projects in Summer of '17 & cofounded the GSoC Incubation Cell of IIT Bombay

Coordinator, *Mood Indigo 2017* *April 2017-Present*
Team Creatives

- Web Coordinator for Asias Largest College Cultural Festival with a footfall of **1.5 lakhs**, hosting **230+** events
- Developing websites, apps, portals for Mood Indigo 2017 that receive over **6.5 million** hits yearly
- Managing a team of over **50 organizers** to conduct and execute events in Mood Indigo 2017

Courses Undertaken

Computer Science	Computer Programming and Utilization, Computer Networks*
Mathematics	Calculus, Linear Algebra, Differential Equations
Energy Science	Data Analysis and Interpretations*, Basic Electrical & Electronics Engineering*, Basic Electrical & Electronics Engineering Lab*, Thermodynamics and Energy Conversion*, Mechanics of Materials*, Energy Engineering Fundamentals
Others	Quantum Physics and application, Basics of Electricity and Magnetism, Economics*, Engineering Drawing, Organic & Inorganic Chemistry

**to be completed by November 2017*

Fields Of Interest

Machine Learning, Deep Learning, Image processing & Pattern Recognition, Applications of AI in Robotics, Data Analysis, Distributed Systems, Open-Source, Web Development, Logic for Computer Science

Extracurriculars

- **MOOCs:** Pursuing various online courses including Machine Learning, Python(DataCamp) and Cryptography.
- **Electronics:** Actively took part in many Hackathons, Bootcamps, Talks and HowThingsWork sessions conducted at IIT Bombay by the Electronics Club and made circuits like Xylobands and Audio Amplifiers.
- **Community Work:** Co-organized a diabetes detection camp as part of CURED (Can U Really Escape Diabetes) at the Siddhivinayak Temple premises, Mumbai (a Tech-Fest 2016 initiative).
- **Journalism:** Wrote a part of the article on "Sophomore PoRs", in the Insight Freshman Newsletter, 2017
- **NSS:** Completed a year long course in the National Social Service, while promoting sustainability, organizing cleanliness drives and spreading awareness on going cashless for the ill-informed.