Ravi Shankar

UG Final Year (B.E. Aeronautics) – Madras Institute of Technology
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Projects

Aircraft Design Project **December, 2014 – 2015**
Prof. Jayaraman *Madras Institute of Technology*

- Studied and calculated the various parameters required for designing a 420-seater "jumbo jet" aircraft.
- Wrote a number of Python scripts for automating the data collection and plotting, which reduced a great deal of time for the fellow undergrads.

Backend Developer Intern **January, 2015 – Present**
Giriraj Namachivayam (Lead Developer) *Genome Life Sciences*

- Wrote utilities to parse and analyze large quantities of chromosome data.
- Introduced the Rust language to the team, and rewrote a number of Bash and Python scripts in Rust, which showed a drastic improvement in performance.
- Currently writing a parser in Rust to process data, which is expected to bring down the processing time from seconds to a few milliseconds.

Improving the fracture toughness of tapered composites **January, 2015 – Present**
Prof. Arumugam *Madras Institute of Technology*

- Conducted various tensile tests and acoustic experiments on tapered composites and studied about the discontinuous stress distributions in each lamina.
- Currently trying to improve the fracture toughness by the addition of filler material in an iterative process.

Open source contributions

Mozilla

- Contributor and reviewer for the Servo browser engine project over the last few months, primarily concentrating on the python code used by the build system and mentoring the newcomers.
- Occassional contributor to the Rust programming language, its documentation and related tooling.
- **Mozillian** since the summer of 2015.

Personal projects

- **Biographer**: A command-line based private diary written in Python, which allows users to write their everyday stories, view them, or search through them later. It makes use of a simple shifting cipher to encrypt/decrypt the contents. It also contains a Rust library, which uses FFI and concurrency to reduce the searching time by a factor of ≈ 100.
- **Free fall**: A terminal based ASCII 2D game written in Rust, where the users try to save a jumper from hitting the cliffs. The game makes use of the terminal's raw mode and interacts with the Unix C libraries for polling the keystroke inputs and prints thousands of characters frame by frame to indicate motion.
- **Flight '16**: A responsive website written in pure HTML/JS/CSS (for our dept. symposium) without the use of any external libraries. Since most of the audience were 2G users, it's optimized in such a way that the desktop version consumes atmost 5 MB, and the mobile version consumes barely 1.5 MB, which brings the loading time to a few hundred milliseconds.
- **Carrot**: An MVC-based webapp which lets organizations to notify their users of the changes made to their webapp(s) by using a simple `<script>` tag embedded on their webpage, which gets data from our server through the JSONP technique.

Programming skills

Languages: Python, Rust, HTML5, Javascript, CSS, Bash, and some LaTeX

Technologies: Git, Mathematica, some Django and Angular JS

Key Courses Undertaken

Aeronautics: Aircraft Structures, Aerodynamics, Propulsion, Flight Mechanics, Aircraft Stability

Mathematics: Numerical Methods, Transform Techniques & PDE, Finite Element Method

Public speaking

- Conducted introductory hands-on sessions for Python in college
- Volunteer at "Mozboot" sessions (conducted by Mozilla) in college

Miscellaneous

- Blogger for the past two years on wafflescrazypeanut.wordpress.com and wafflespeanut.github.io
- I also play the Indian flute, and sometimes juggle