Akshay Deodhar

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Education

- **College of Engineering, Pune** — Pune
  Computer Engineering, CGPA 9.68 — *August 2017 - Present*
- **Fergusson College** — Pune
  HSC, 92.4% — *2015 - 2017*
- **BVB's Paranjape Vidya Mandir** — Pune
  SSC, 95.2% — *2005 - 2015*

Work Experience

- **COEP Satellite Team** — Pune
  Attitude Determination and Control Subsystem — *November 2017 - Present*
  - Work involves writing and maintaining code for simulating satellite dynamics
  - Integrated the publically available code for NRLMSISE-00 atmospheric model into simulation
  - Created a continuous-thrust orbit simulation using NASA's General Mission Analysis Tool and it's Python interface
  - Wrote custom python code for finding the optimum sail normal vector for orbit raising, calculate forces acting on the satellite for that orientation. This is called from GMAT to determine external forces
  - Verification of results based on available results and analytical methods

Selected Projects

- **Trillian- a command-line chess game**
  Data Structures and Algorithms project
  - Compatible with Forsyth-Edwards format
  - Move validation and legal move generation
  - Minmax with alpha-beta pruning used for game tree search
  - Reasonably competent engine, beats novices, makes move in around 5 seconds
- **RankRecommend- a rooted-pagerank based web app for github follow recommendations**
  Principals of programming languages project
  - Flask server accepts github username or graph text file with root node
  - Requests and BeautifulSoup used for scraping github to build user neighbourhood graph
  - Graph represented in NetworkX. Numpy used to solve for the rooted pagerank *eigenvector*
  - Users sorted on the basis of eigenvector entries, top follow recommendations displayed by server

Publications

- **Attitude Control Using 3 Axis Magnetorquers and Pitch Axis Reaction Wheel for Solar Sailing Satellite COEPSAT-2**
  69th International Astronautics Congress (IAC) Bremen, Germany.
  Co-authored with 6 others

Skills

- **Programming**
  - Proficient: C, Python
  - Familiar: Scheme, x86 Assembly, Bash, C++
- **Tools**
  - Unix utilities, Git, LaTeX, Gnuplot, Make, Vim, Markdown
- **Languages**
  - English, Marathi, Hindi

Extra-Curricular Activities

- **Chess team**
  School, Fergusson, COEP
- **Abhiyanta**
  COEP's magazine club
- **Personal blog**
  Bri9k.github.io

Hobbies

Love reading fantasy, science fiction, and farce. Enthusiastic about trekking. Listen to (and attempt to play on harmonium) all kinds of music. Write a bit of limerick. Currently learning rowing.