# ARUNA SANKARANARAYANAN

aruna.evam@gmail.com · 1234.567.890

## EDUCATION

*2009 - 2013*　　BMS Institute of Technology

*BE, Computer Science*

Score: 80.6% · *First Class With Distinction* · Ranked 4th out of 90 students · Thesis: *Automatic Reconfiguration for Large-Scale Reliable Storage Systems*
Description: This thesis was a working prototype of a Byzantine fault tolerant system - an implementation of the IEEE paper by the same name - that helped manage membership in dynamically changing systems. Used Java, Swing, J2ME and MS Access.
Advisors: Prof.Hemamalini B.R.

Seminar: *Hole detection* Implemented a working prototype to detect holes in wireless sensor networks. Used Matlab for the implementation.

## HONORS

- 2015 The Chennai Flood Map; United Nations recognition
- 2014 *hillhacks 0* scholarship
- 2013 Scholarship to write a book on Mallard; Floss Manuals and Google
- 2013 Outreachy scholarship; GNOME
- 2012 One out of 50 Indian students, selected (by application) to attend a week-long summer school on research in computer science; IISc
- 2007 National level web developer award in the under 15 years category; Oracle Think.com

## TALKS, WORKSHOPS & CONFERENCES

- 2017 (Speaker by invite) Embedded For Her
- 2017 (Speaker by invite) Swatantra
- 2017 (Speaker) rootConf: Talk
- 2016 (Speaker) Fifth Elephant: Reducing the World with JavaScript
- 2015 (Speaker) Lightning talk about the gender map at Open Data Conference, Datameet, Delhi
- 2015 (Organiser, Attendee) School Program, *hillhacks 1*
- 2014 (Speaker, Attendee) Scratch Workshop, *hillhacks 0*
- 2014 (Speaker) Workshop on Processing, FSMK
- 2014 (Attendee) Creative Maths and Science Communication Workshop, IMSc, Chennai
- 2013 (Speaker) Lightning Talk on my work in the Outreachy Internship, GUADEC

## SELECTED PRESS & MEDIA

- Dec, 2015 Chennai Flood Map
  - The citys flood map goes global, The Hindu
  - Her App That Saved Many Lives During Chennai Floods Is Now Among UN Selections, But This Techie Wants To Do More For People, India Times
  - This app by a Bengaluru girl that saved several lives during Chennai floods, will now inspire thousands at the UN Ecuador Conference, Business Insider
  - This Chennai map will show you exactly which waterlogged area, road you need to avoid, The Times of India
  - Now here's a map to help you report and avoid flooded streets in Chennai, Firstpost
  - This ingenious Chennai Map shows which areas are currently flooded, Business Insider
  - Citizens build map data flooded Chennai using open source maps, Geospatial Media
  - Bangalore techies build app to help Chennai flood victims, Gadgets Now

- Nov, 2015 Gender Map
  - Mapping the Sexism of City Street Names, CityLab, The Atlantic
  - Mapping female versus male street names, Mapbox blog
  - Does San Francisco Have Mostly Gender-Biased Street Names?, SF Curbed
  - You see this Gender Bias on the road every day, Huffington Post
  - Mapping the Gender Imbalance in City Street Names, Hyperallergic
  - Shock news: street names are sexist, City Metric
  - Where the streets have no (female) names, LiveMint
  - Do You Know Many Roads in Your City are Named After Women?, The Ladies Finger

INDEPENDENT PROJECTS

*OSM mockingbird*

**September 2017** (WIP) Working on a Statistical Machine Transliteration project to transliterate street names in India from English to indic languages. Using MapReduce algorithms in NodeJS to extract the street names from OpenStreetMap and the Moses Translation Engine for the actual transliteration. Tokenising, and syllabifying data from the Brahminet corpus

*Analysing the Indian Rail Network*

**September 2017** (WIP) Working on a project to run statistical analysis on the railway network in India using open data from Datameet

*Map interfaces*

Built maps in a pro bono capacity.

- 2017 The Internet Shutdowns Tracker for SFLC
- 2016 List of places visited by The Life of Science project

*Analysing Bangalore's bus Network*

**Feb 2016** Developed scripts and visualisations to analyse open data of the bus network in Bangalore with a team mate from Mapbox. Specifically built MapReduce scripts to extract the street network and analyse it. Used Mapbox libraries to visualise the results.

*The Chennai flood map*

**Dec' 2015** Conceptualised and led the implementation of a web map to crowd source information about flooded streets in Chennai using Mapbox libraries. At peak usage, the app had at least 200K users. The project has inspired similar projects by MIT, and citizen led flood response movements in Houston and Dar es Salaam among others

*The gender map*

**Oct 2015** Analysis of the gender of eponymous street names. The names were retrieved using MapReduce algorithms from the OpenStreetMap project.

*Archiving Indian classical music in the public domain*

**2015 - Present** I am trying to improve the presence of Indian Classical music in the public domain by collecting such music from renowned artists, uploading my own recordings and finding music that is free of copyright. I have improved the number of such recordings on Wikimedia Commons from 0 to around 50.

WORK EXPERIENCE

Oct '15 – Present          Data & Systems Engineer

*Mapbox*

**Oct 2015 - Oct 2016**: Built open tools and analytics dashboards using JavaScript, HTML5, NodeJS and d3 for OpenStreetMap. Pre-processed, munged and loaded data for the Mapbox geocoder. Built features into our open-source vector-tile based geocoder, Carmen. Worked on implementing data tokenization, data synonyms, data filtering, data ranking based on geographical importance etc.

**April 2016 - Present**: Worked on over-arching infrastructure, distributed systems and systems engineering at Mapbox. Worked with resources from the AWS market to build in-memory caches; in a second run a year later, I containerised these caches, both projects resulted in huge cost savings - the first one resulted in a 90% cost savings and the second one in an additional 75% cost savings. I also architected cache-clearance systems, continuous build systems,

migrated several TBs of data from one origin region to another and helped move our stacks from a server-based infrastructure to a dockerised infrastructure. I was a core member in the team that designed, benchmarked, evaluated and released the architecture that helped Mapbox to launch with Snapchat. We scaled our systems to receive 10X the traffic without a marked increase in the cost. In addition, I also onboarded several folks and started JavaScript hours to teach programming to non-programmers.

### Jan '14–Aug '15        Lead game engineer

*Brainwave*

**Jan '14 - Aug '15**: Lead game engineer and founding member of the engineering team at Brainwave. As part of a two member engineering team I implemented 30 online science games, and a web interface and database to store user data. The web app took us a year to build and worked on all modern browsers. The web app was also converted into an iOS and Android app using PhoneGap and Cordova.

Besides code, I implemented version control systems, coding best practises, systems and processes for building, testing and maintaining code and mentored two interns. I also wrote articles for the in-house science magazine, Brainwave.

### Aug '13–Jan '14        UI Engineer

*Fidelity Investments*

**Aug '13 - Jan '14**: Fixed UI bugs on proprietary web applications built using C#

### Aug '13–Jan '14        Writer

*The Hindu*

**Jan '13 - Jan '14**: Wrote a fortnightly column, The Edge, for The Hindu talking about developments in computer science and free and open source software. Estimated readership: 22,330,000.

### Jun '12–Aug '12        Research Intern

*BMSIT*

**Jun '12 - Aug '12**: Implemented an algorithm to gauge real life sizes of objects in an image, based on the size of a static CD in the image, using openCV and Matlab. The algorithm used image processing techniques like region of interest isolation, segmentation and generating binary images to calculate the CD size in the image, and used it to calculate measurements of other objects in the image, through a user interface.

## OPEN SOURCE CONTRIBUTIONS

### Oct '13 - June '15        Developer

*GCompris Project*

Helped porting a set of activities from the Python based GCompris project to its Qt-QML variant. Mentored students during the 2014 and 2015 cycles of the Google Summer of Code.

### Oct '12 - June '15        Contributor

*GNOME*

Wrote technical and user documentation for the GNOME Foundation and fixed several user interface bugs. Developed a comprehensive understanding of the XML based templating language, Mallard, used for documentation, and was funded to write a book about it at the Google Documentation Camp in 2014. I was also a member of the GNOME Foundation from June 2013 - June 2015.

### April '12 - Present        Contributor

*Wikipedia*

I create and improve content on women to reduce the gender bias on Wikipedia. I also create and improve content related to Carnatic music

### Jun '11 - Aug '14        Contributor

*Free Software Movement, Karnataka*

Volunteered and helped organise conferences to evangelise open source and teach the usage of open source libraries in engineering colleges in Karnataka.

Taught Linux usage to housewives and helped small shops and businesses move from MS Windows to Linux.

OTHER INTERESTS

*Music*    ***1996 - Present***: Trained singer in the Carnatic tradition. I especially focus on learning and performing the Thiruppugazh (Ancient Tamil Bhakti poetry from the 6th century) in the Carnatic style.