Sankha Narayan Guria

Software Engineer · Mumbai, India

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Education

Indian Institute of Technology Jodhpur   *Jodhpur, India*
B.Tech. in Systems Science · GPA: 8.26 / 10.0   *2011 - 2015*

Experience

BrowserStack   *Mumbai, India*
Software Engineer   *June 2015 - PRESENT*
- Worked on *scaling* our custom Selenium Hub running more than *200,000 sessions per day* - a 2x growth and developing various desktop platform related features. Changed the team's engineering culture to *use automated testing suites* to ship faster with more than 99.9% stability.
- Shipped *automated web and native app testing* platform for real physical devices on both iOS & Android.
- Worked with local tunnel team to make the product more stable in *high traffic and long running sessions*; reducing crashes significantly.
- Built a *realtime message exchange service* used across BrowserStack to enable communication between browsers & backends via websocket.
- Deployed a multi-region *system instrumentation setup* for all applications on Linux, OS X and Windows backed by InfluxDB & collector agents.

University of Freiburg   *Freiburg, Germany*
Research Intern   *May 2014 - July 2014*
- Worked with Dr. Peter Thiemann to develop JavaScript language semantics with *transparent proxies against the equality operator*.
- Defined an *object capability model* over transparent proxies for security related use cases in contract systems.
- Propositions were implemented on SpiderMonkey VM's interpreter & baseline JIT and proved to run with *real-world benchmarks*.

Mozilla   *Remote*
Google Summer of Code Intern   *July 2013 - Sept. 2013*
- Defined a deterministic algorithm to *analyze browsing and form submission behaviour* of the user and use it to detect a search form.
- Implemented the same as a *desktop browser module* in Firefox with optimized async I/O and a full automated test suite.

Scrollback   *Bangalore, India*
Intern   *May 2013 - July 2013*
- Worked on building the intial versions of Scrollback - building the *web chat to IRC bridge*.
- JavaScript & Node.js was used in the product to reduce code duplication across the web widget and server backend.

Publications

Transparent Object Proxies in JavaScript   *Prague, Czech Republic*
The European Conference on Object-Oriented Programming (ECOOP) 2015   *July 2015*
- M. Keil, S. N. Guria, A. Schlegel, M. Geffken, P. Thiemann. · DOI: 10.4230/LIPIcs.ECOOP.2015.149
- Verified artifact for the same was also published. · DOI: 10.4230/DARTS.1.1.2

Competencies & Skills

Competencies
- Generally interested in implementation of language VMs and JITs. Contributed *patches to SpiderMonkey* - Mozilla's JavaScript engine implementing many parts of the *ECMAScript 6 Spec*, later adding support for few operations in IonMonkey - the optimizing JIT compiler.
- Used to contribute to Mozilla Firefox - to make the browser more *responsive* by using *asynchronous I/O* and a few devtools patches.

- Built a cross-platform *audio/video file format converter* and audio compressor, using ffmpeg with added scripting capabilities. Downloaded more than *30,000 times* and reviewed across multiple sites for its simplicity and ease of use.
- Developed an *online judge for hosting programming contests*, that included a *secure sandbox for running programs*, a web based UI for user accounts, setting up and making submissions for problems. The platform was used to host institute programming contests for *3 years*.
- Gave talks on using JavaScript as a glue language and ES6 at *JSFoo 2012* and *JSChannel 2013* respectively.
- Dabbled in personal projects that deal with Web APIs, SIMD instructions, toy JIT compilers and asynchronous I/O APIs.

    Most of my work is open-sourced at *github.com/sankha93*.

Skills
- Proficient with C, C++, Java and JavaScript.
- Familiar with Rust, Ruby and Python and used it for some projects.
- Experienced with specific technologies like Node.js, Redis, MySQL, V8, SpiderMonkey, Git and gdb.