

# Robert C. Senkbeil

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## IBM - Emerging Technology

### Conversational Computing V2, Austin, TX August 2016 - Present

- Guided and assigned issues to several backend team members regarding feature enhancements and bug fixes
- Wrote model abstraction to provide query and storage layers for Cloudant, CouchDB, Redis, and in-memory databases
- Implemented chatbot architecture and integration for *Slack* and *Skype*

### Conversational Computing V1, Austin, TX August 2015 - July 2016

- Wrote integration with *Watson* services for speech-to-text and text-to-speech to recognize vocal commands and read out results
- Designed and implemented *Polymer* components to handle text-to-speech and speech-to-text functionality
- Created full stack to interactively display Material-inspired cards based on user interaction via speech
- Architected message queue system to provide a *pub/sub* model for asynchronous voice commands and results

### Ignition/Nitro, Austin, TX July, 2014 - July 2015

- **Spark Kernel** - maintainer of IBM Spark Kernel
  - Co-architect for kernel structure using akka
  - Implemented thread grouping mechanism to capture and redirect JVM output based on where content was executed (user/kernel)
  - Developed Comm API interface for more detailed communication
  - Developed initial magic plugin interface for IPython-like magics
- **SPARK-4923** - Updated Spark REPL API to only expose necessary methods (based on experience) and wrote Scaladocs for all public API methods
- **SPARK-3256** - Developed and contributed fix to Apache Spark involving dynamically loading libraries into the Spark shell (a Scala REPL wrapper) without needing to restart the interpreter
- Explored core, streaming, and SQL aspects of Apache Spark in a distributed environment with large datasets
- Gained experience working with *Akka* for asynchronous and distributed application development
- Utilized *Scalatest* framework for isolated unit testing and integration testing in a TDD (test first) manner

### Spark Cluster Management, Austin, TX April, 2014 - July, 2014

- Implemented layer on top of *SoftLayer* API to bring up and tear down virtual instances running *Apache Spark* standalone mode
- Wrote *Ruby* application utilizing *Rails* for *RESTful* web services
- Wrote *Javascript*, *HTML5*, and *CSS3* for responsive web frontend utilizing Ruby templating to connect to Ruby web service
- Utilized *Docker* for development and deployment of web applications and dependencies

### if-ML Project, Austin, TX January, 2014 - March, 2014

- Wrote *Python 2* application utilizing *Flask* for *RESTful* endpoints and *scikit-learn* for simplistic machine learning using binary linear regressions and clustering (k-means)
- Wrote *NodeJS* application utilizing *Express* for *RESTful* web services and *Mocha* with *Chai* for unit testing
- Wrote *Javascript*, *HTML5*, and *CSS3* for responsive web frontend utilizing built-in templating engines provided through Express to connect to the web services

- Apache Foundation**     **Apache Toree PPMC & Maintainer**, Austin, TX January 2016 - Present
- Led release process for version 0.1.0
  - Provided guidance to new PPMC members on architecture and implementation decisions of new features
  - Architected and implemented custom plugin system using event-based dispatch
  - Managed pull requests towards project, providing guidance and code alterations when necessary
- Mentorship**     **Google Summer of Code**, Scala Debugger April, 2017 - Present
- Provide technical guidance towards implementing an asynchronous debugger in the Scala Debugger library
- SuperCharger Fintech Accelerator**, Hong Kong February, 2017 - April, 2017
- Provided technical advice and guidance for startups in Hong Kong via Skype sessions
- New Hire Buddy Manager**, IBM May, 2016 - December, 2016
- Orchestrate events for new hires in IBM Emerging Internet Technologies
  - Provide 1-on-1 sessions for new hires to ask questions and get more detailed help
  - Guide other mentors in ways they can interact with the new hires
- Talks**             **Scala Debugger**, ScalaSphere March, 2017
- Gave talk regarding personal project providing a library and tooling to debug Scala applications
  - Participated in panel regarding the current state and future of tooling in the Scala space
- Spark Kernel**, Apache Spark Meetup (Bay Area) July, 2015
- Held talk regarding the architecture and design of the *Spark Kernel* project including its capabilities to enable dynamic applications to interact with *Apache Spark*
  - Demonstrated applications built on top of the *Spark Kernel* project that illustrated dynamic queries and RESTful functionality
  - <https://www.youtube.com/watch?v=2AX6gOtK-us>
- Docker**, IBM Virtual Conference May, 2014
- Demonstrated to an internal audience the ability to run graphical applications (vim, IntelliJ, Firefox) through Docker, including remotely connecting to those applications using xpra