Brian A. Cohn

LinkedIn
GitHub.com/bc

(323) 455-4184
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Skills

Programming Languages	Scala, Python, R, Matlab, LaTeX, Bash
Databases	S3, SQL, MongoDB
Distributed Technologies	Apache Spark, Spark-Streaming, Spark SQL, HDFS
Server Technologies	Docker, AWS, Azure, Google Compute Cloud, Armor, USC-HPC, Jenkins, Travis-CI
Software Development	Agile, SCRUM, GitFlow, Code Review, Sprint Planning and Review, JIRA

Experience

USC Viterbi School of Engineering *May 2015 - Present*
Los Angeles, California **Computer Science Ph.D. Student**

- Led a 5 person team composed of 2 Masters Students, 2 PhD Post-Docs, and 1 PhD Student.
- Wrote a robotic learning algorithm to control a human cadaveric hand by its muscles.
- Designed partnerships with USC and Pomona College to create 18 internships with funding or credits, and led teams in designing research-grade code.
- Implemented a Scala REST API to handle a neural simulation data stream of 10GB/s.

Tools: Scala, Spark, EMR, HDFS, R, D3.js, Meteor.

Swiss Federal Institute of Technology *April 2015 - May 2015*
Zürich, Switzerland **Computer Scientist**

- Taught biostatistical techniques to 5 professors and 6 students at the Department of Theoretical Computer Science.
- Presented multiple research talks in Zürich.
- Derived and implemented a highly theoretical hit-and-run algorithm in Spark.
- Published an international conference proceeding at the IEEE Engineering in Medicine and Biology Society.

Tools: Scala, Java, Spark, HDFS, Python, R, Amazon EC2, and MongoDB.

Toyota Motor Sales *January 2015 - April 2015*
Torrance, California **Consultant**

- Single-handedly developed a crowd-sourced data validation platform that connected with tens of thousands of participants.
- Evaluated the statistical effectiveness of machine learning algorithms implemented.
- Identified significant flaws in the C360 Dealer-Concerns model, and provided exceptional proof of their existence.

Tools: Amazon Mechanical Turk, Python, R, D3.js, Scala, mllib, and HDFS.

Keck Graduate Institute *May 2014 - August 2014*
Claremont, California **Project Data Scientist**

- Created massively distributed in-memory machine learning frameworks to hold the 10-terabyte network and graph database from the USPTO.
- Applied a gradient boosted decision tree to predict new utility patent clusters.

Tools: AWS EC2, HDFS, R, h2o.ai, Spark, Amazon RDS.

Eli Lilly and Company *September 2013 - May 2014*
Indianapolis, Indiana **Consultant**

- Interfaced directly with Tony Zhang, the Vice President of R&D-Asia for 9 months.
- Led a team of six people in developing proprietary software to improve patient compliance.
- Wrote a real-time machine-learning pipeline that tags tweets about issues with competing medications.

Tools: AWS, Python, scikit-learn, R and D3.js.

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Peer-reviewed Publications

"Feasibility Theory reconciles alternative approaches to neuromuscular control"
In Review: Journal of Neurophysiology. October 2017
Cohn BA, Szedlak M, Gartner B, Valero-Cuevas FJ

"Motor learnability across posture"
Accepted: Frontiers in Robotics and AI: Bionics and Biomimetics. October 2017
Cohn BA, Jalaleddini K, Valero-Cuevas FJ

"Retinal topography maps in R: new tools for the analysis and visualization of spatial retinal data."
Journal of Vision July 2015, Vol.15, 19. 2015. https://github.com/briancohn/retina
Cohn BA, Wainwright P, Collin S, Schmitz L

"Exploring the nature of muscle redundancy via subject-specific and generic musculoskeletal models"
Featured Publication: Journal of Biomechanics, 2015.
Valero-Cuevas FJ, Cohn BA, Yngvason HF, Lawrence EL

"Structure of the set of feasible neural commands for complex motor tasks"
37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2015
Valero-Cuevas FJ, Cohn BA, Szedlák M, Gärtner B, Fukuda K

"Eye histology and ganglion cell topography of northern elephant seals (Mirounga angustirostris)."
Accepted: The Anatomical Record, 2016.
Smodlaka H, Khamas W, Palmer L, Lui B, Borovac J, Cohn BA, Schmitz L

Patents

Cohn, BA. "METHOD AND APPARATUS FOR CONTINUOUSLY PRODUCING ANALYTICAL REPORTS"
U.S. Patent Application No.: 15/645,860. 7 Jul. 2017.