Brian A. Cohn

LinkedIn
GitHub.com/bcohn12

(323) 455-4184
briancohn@kaspect.com

Skills

Programming Languages	Scala, Python, R, Matlab, LaTeX, Bash, Ruby
Databases	S3, MongoDB, RedShift, SQL
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.

Brian A. Cohn

LinkedIn
GitHub.com/bcohn12

(323) 455-4184
briancohn@kaspect.com

Peer-reviewed Publications

"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/bcohn12/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

Brian A. Cohn

LinkedIn (323) 455-4184
GitHub.com/bcohn12 briancohn@kaspect.com

Education

University of Southern California *2015-Present*
Ph.D. Computer Science, Viterbi Dean's Doctoral Fellowship

Pitzer College *2014*
B.A. with Honors - Computational Biology

Major Awards

NSF Graduate Research Felllowship - Recipient	Mar-2017
NSF Graduate Research Fellowship - Honorable Mention	Mar-2016
Cancer Research Fellowship, Michelson Center for Convergent Bioscience	Apr-2017
USC Viterbi Dean's Doctoral Fellowship	May-2015
Howard Hughes Medical Institute Research Grant	Apr-2013

Selected Awards

2nd Prize, USC CancerBase Hackathon	Apr-2017
Top 8 Finalist, Viterbi Innovation Maseeh Prize Competition ($2.5k Award)	Nov-2016
Top 10 Finalist, USC Stevens Innovator Showcase	Oct-2016
Microsoft US Imagine Cup Winter Semi-Finalist	Dec-2015
$24,000 Rackspace Startup Credits	Dec-2015
$5,000 AWS Prize, USC Venture Incubation Program (Virtual Reality)	Nov-2015
$5,000 AWS Prize, USC Venture Incubation Program (Biomedical Compute Cloud)	Nov-2015
$10,000 Grand Prize (USC Hacking Virtual Medicine) IEEE Standards Association	Oct-2015
USC Health Technology Innovation Fellowship in Digital Health	Aug-2015
20,000 Compute-Hour Credits, USC HPC Cluster	Nov-2014
Pitzer College Student Research Award	Nov-2013
Pitzer College Student Research Award	Mar-2013

Invited Talks

Talk: MedTechWorld-West Annual Conference, Anaheim	February-2017
Poster: Society for Neuroscience, San Diego	Nov-2016
Talk: U. of Minnesota Computational Sensory-Motor Neuroscience (CoSMo)	Mar-2016
Poster: Winter Workshop on Neuromechanics, New Orleans	Jan-2016
Talk: National Science Foundation - Innovation (I) Corps Fall Networking Event	
Talk: 37th Annual International IEEE Engineering in Medicine and Biology Society, Milan Italy	Aug-2015
Talk: USC Viterbi School of Computer Science Seminar Series	Aug-2015
Poster: 39th Annual Conference of the American Society of Biomechanics	Aug-2015
Poster: 25th Annual Conference of the Society for the Neural Control of Movement	Apr-2015
Talk: Masters Capstone Research Symposium, Keck Graduate Institute	May-2014
Talk: Masters Project Thesis Defense, Keck Graduate Institute	Apr-2014
Talk: Public Masters Capstone Talk, Keck Graduate Institute	Dec-2013
Invited speaker, UC Davis FishLab	Oct-2013
Talk: Regional Society for Integrative and Comparative Biology, UC Riverside	Oct-2013
Talk: Science Department Symposium, Keck Graduate Institute	Oct-2013
Poster: Mathematical Bioscience Institute, Ohio State University	Jul-2013
Talk: Howard Hughes Medical Institute Student Seminar	Apr-2013

Brian A. Cohn

LinkedIn
GitHub.com/bcohn12

(323) 455-4184
briancohn@kaspect.com

Teaching & Workshops

Panelist — Dec-2016
BioTech Connecction Los Angeles, UCLA

Workshop Speaker — Aug-2016
Summer School in Computational Sensory-Motor Neuroscience, Minneapolis, MN

Panelist — Jun-2016
MedTech-World Conference EAST, New York City, NY
"Making Sense of Big Data: Determining Actionable Data & Your Roadmap for Utilization"

Panelist — Feb-2016
Annual Medical Device & Manufacturer - MedTech-World Conference WEST, Anaheim, CA
"Making Sense of Big Data: Determining Actionable Data & Your Roadmap for Utilization"

Invited Lecturer — Feb-2016
USC Marshall School of Business, MBA Program
"Financial analytics and scalable visualizations in R"

Guest Lecture for BME 504 — Oct-2015
USC Viterbi School of Engineering; Graduate School Department of Biomedical Engineering
"Linear program design for tendon driven systems"

Guest Lecture for Neuromuscular Systems — Oct-2014
USC Division of Biokinesiology and Physical Therapy
"Neuromechanic optimization in open source software"
https://github.com/bcohn12/biokinesiology

PharmaPack North America Conference — Jun-2014
"Driving Pharmaceutical Product Design with Consumer Intelligence: What Are Patients Saying about the Design of Your Pharmaceutical Product?"

Eli Lilly and Company Headquarters — May-2014
"Big Data Analytics in Post-Market Surveillance and Pharmacological Vigilance"

Guest Lecture for Sensory Evolution — Apr-2014
W.M. Keck Science Department
"Retinal Specializations in the Vertebrate Eye: Spatial Interpolations and Phylogenic Comparisons of Retinal Ganglion Cell Density Maps"

National Society for Integrative and Comparative Biology — Jan-2014
"Influence of Zooplanktivory on Retinal Ganglion Cell Topography in Labrid Reef Fishes"
http://sicb.org/meetings/2014/schedule/abstractdetails.php?id=1100