Andrew Scott Barr
Data Dude and Mobile Developer

el.andy.barr@gmail.com
`www.andy-barr.com`
(+1) 425 829 7011

Professional Experience

CERCA	Cerca is an app which helps students quickly figure out which of their peers are on campus. I worked on the frontend and backend, built tests in Javascript, and surveyed dozens of users and college students. Cerca is built using Ionic (which uses Angular and Cordova), PostGIS, and is hosted on AWS.
THRUHEALTH	I met one of ThruHealth's founders at an artificial intelligence meetup. Since then, I have deployed a sensor system and database, and am now building their cross-platform mobile app.
UNNAMED STARTUP	I left my PhD program to create this startup, which never finalized a name. It used crawlers and user submissions to aggregate local events and then recommender engines to tailor them to users. I wrote crawlers, learned how to pipeline the data, and tested a few recommendation algorithms. Eventually I began focusing my time on Cerca and ultimately left this project behind.
PHARO	I contracted with Pharo to help their client, Everist Health, solve some statistics and signal processing problems. In the process, I wrote around 1,500 lines of Python to visualize and automate a tedious component of their data analysis procedure. My work, which sometimes involved over 50 hour work weeks, allowed them to ship their product on time.
HACKATHONS	Almost nothing excites me more than hackathons. I am an avid participant of hackathons of all topics, having attended as a developer, volunteer, mentor, and judge. My teams have won and placed in a number of them. ``Hack the Commute'' was particularly memorable, and my team continued development for 2 months and ultimately presented to the Mayor of Seattle. Looking forward to attending many more in the future!

Education

UC MERCED (2012-2013)	I was a PhD student in the applied math program for 1 year, funded by the University of California Cota-Robles Fellowship.
TECHNION (SUMMER 2011)	I worked on a project in the VISL lab, where I implemented simplified approximations to the geodesic active contour algorithm.
UNIVERSITY OF WASHINGTON (2008-2012)	Bachelor of Science degree in Applied and Computational Mathematical Sciences. I took 10 graduate level courses as an undergraduate. Degree emphasizes on signal processing. Math GPA: 3.67.
BELLEVUE COLLEGE (2006-2008)	Associate Degree. Graduated as a member of the Phi Theta Kappa Honor Society. Enrolled there at age 16 through the 'Running Start' program. GPA: 3.81.

Technical Abilities

PYTHON	I have over 6 years of experience using Python with NumPy, scikit-learn, Sage, Pandas, and other libraries. Experience using AWS via Boto, SQLAlchemy with Postgres, and more.
JAVASCRIPT	My experience with Javascript includes using REST APIs, Angular, Cordova, and the Ionic framework. I regularly program in ES6. Currently learning D3 and PaperJS for visualizations.
AWS/DATABASES	Working to become a certified AWS Solutions Architect. I have worked with Postgres, PostGIS, and RethinkDB in production. Looking to learn and use Apache's data stack.
OTHER	6 years of experience with Linux. I have worked succcesfully with Git workflow. Learning to use Docker. I have implemented parallel routines in Fortran and C using OpenMP and MPI.

Most Recent Academic Research

DATA MINING AND BAYESIAN METHODS	Began research on the application of Bayesian methods to big data. Supervised by Professor Harish Bhat at UC Merced.
TENSOR DECOMPOSITIONS AND VIDEO GESTURE RECOGNITION	Researched, adapted, and implemented the High-Order Singular Value Decomposition (HOSVD) to video for use in real-time gesture recognition on smartphones. Dimension reduction techniques (LLE and ISOMAP) played a prominent role.
FACE RECOGNITION AND X-LETS	Spent two quarters investigating facial recognition techniques. In the process, I had the chance to experiment with contemporary tools such as curvelets, noiselets, and the K-SVD. I reported my progress to Professor J. Nathan Kutz, then chair of the UW Applied Math department.

Recent Awards and Conferences

DATA DAY SEATTLE 2015	I work to stay active in the Seattle community of data scientists, and this is certainly its largest gathering. I learned amazing things that I am looking forward to trying out over the next year.
RECSYS2014	I attended this to learn about advances in the field for my unnamed startup.
EUGENE COTA-ROBLES FELLOWSHIP	I received this competitive award, which provides tuition, insurance, and a living stipend for PhD studies at UC Merced, following nomination by the faculty.
MARY GATES RESEARCH SCHOLARSHIP	I received this scholarship during the 2011-2012 academic year. Apart from a $4000 reward, this scholarship provided access to conferences, mentorship on presenting research, and was an invaluable part of my undergraduate curriculum.
SACNAS CONFERENCE TRAVEL SCHOLARSHIP	I was given a travel scholarship to attend and present at the SACNAS (Society for the Advancement of Chicanos and Native Americans Society) conference, for the 2009, 2010, and 2011 conferences.
MATH CONFERENCES	I attended the SIAM session on Nonlinear Waves in Seattle (2012), the Spring 2012 AMS Sectional Meeting in George Washington University, and many local (to Seattle) statistics workshops. I received a unviversity award (Graduate Student Discretionary Award) to attend the 2013 Joint Mathematics Meetings (JMM) in San Diego.

Other Professional Experience

LECTURER, SUMMER 2012	I led discussion sessions for two ``Intensive Calculus'' courses (approximately 50 students) at UC Merced and received excellent ratings from the students.
PIANO TEACHER, 2005-JUNE 2012	I taught piano to over 25 children, teenagers, and adults. Teaching piano has given me firsthand insight into the learning process and made me adept at communicating complex ideas.
GNOMEDEX, 1-2 WEEKS PER YEAR, 2006-2010	I had the opportunity to work directly for Chris Pirillo, prominent blogger and organizer of the Gnomedex conference. This brought together a diverse set of bloggers early in that movement.
CONCERT PROMOTING, 2006-2009	I helped Patricia Mejia, a local music promoter, with duties related to the promotion of bands and concerts. I worked at merchandise tables, hung posters, handed out flyers, and organized mailing lists. This vastly grew my people skills and helped me gauge advertising efficacy.

Other Skills

LANGUAGES	My native language is English. I speak Spanish (Peru) at a heritage level - I can communicate effectively and learn new technical vocabulary as needed. Additionally, I feel confident communicating in Brazilian Portuguese. Lastly, I can speak Hebrew at ILR level 3.
WIKIPEDIA	I am fairly familiar with Wikimedia and have edited dozens of pages. Furthermore, I am familiar with the API and have experience using data from the Wiktionary website for a personal project.

References

Ramses Alcaide
Ramses is the CEO of Pharo LLC, which is an engineering consulting firm. I worked with him for about 8 months. You can reach him at ramses.alcaide@pharo-llc.com or 206-696-4469

Steve Everist
Steve Everist is the CTO of Everist Health. I reported directly to him, Peter Lenehan (Chief Medical Officer), and Art Gershowitz (Technical Director) for 5 months as I performed statistical and signal processing consulting for their AngioDefender product. You can reach him at steverist@everisthealth.com or 734-645-5549. You can also reach Art Gershowitz, with whom I collaborated on implementation details, at agershowitz@everisthealth.com or 734-649-6569.

Allan Yeueng
Allan was the project manager for my team for ``Hack the Commute''. We worked together on that project for 3 months, and since then in other hackathons. He runs a consulting agency and serves the city of Bellevue. You can reach him at akyeung@gmail.com or 206-499-1157

Barret Newberry
Founder of ThruHealth. I am working with him to build his company's mobile experience. Reachable at barret@thruvid.com or 206-963-5523

Past References

J. Nathan Kutz
I have taken two courses with Professor Kutz and researched under his supervision since spring 2011. During our first meetings, I presented him results and tutorials using curvelets and other multiscale methods. When I applied to graduate school, he was my primary recommender, and served as chair of the applied math department. `http://www.amath.washington.edu/~kutz/`. He is reachable at kutz@amath.washington.edu.

Eric Horvitz
I have known Eric since approximately November 2010, when I began teach his son piano. He is an artificial intelligence researcher at Microsoft Research and I have discussed my projects and goals with him extensively. His guidance has served me well and I look forward to future collaborations. His website is `http://research.microsoft.com/en-us/um/people/horvitz/`. He is reachable at horvitz@microsoft.com.

William Stein
I have taken two courses with Professor Stein and he knows me well through visits during office hours. I was one of two undergraduates in his autumn 581 course. which I received a 3.9 grade in. I also received a 3.9 grade in his 480 course. He is well known for his work in Elliptic curves and for being the creator of the open-source package Sage. His website is `http://www.wstein.org`. He is reachable at wstein@gmail.com.

Yehoshua Zeevi
Professor Zeevi was an important mentor during my time at the Technion. He and I discussed future career options and he inspired me to look for ways to use applied math to help people. Professor Zeevi arranged for me to visit Intel Labs and discussed contemporary methods in image processing and sparse representations with me. His email is zeevi@ee.techion.ac.il

Yongmin Kim
I took his graduate level image processing course (EE 568). He knows me well through visits during office hours. He chaired the BioEngineering department and ran the Image Computing Systems Laboratory (ICSL). He is currently president of the Pohang POSTECH University in South Korea. ykim@u.washington.edu.

Jake VanderPlas
I worked under the close guidance of Jake VanderPlas during my first two quarters at the University of Washington. He mentored me for my research in Pre-MAP and continues to point me to new ideas and opportunities. He is reachable at vanderplas@astro.washington.edu.

Other Past Recommenders
In the past, I have received letters of recommendation from other University of Washington faculty. These include Professor Kenneth Bube of the math department, Professor Stephen Mitchell of the math department, Professor Andrew Conolly of the astronomy department, and Christina Zubelli of the Spanish and Portuguese department. My advisors from the Technion have also wrote on my behalf - they are Vadim Ratner (currently a professor at Stony Brook) and Eli Appleboim. From Bellevue College, I have received letters from Professor Woody West , Professor Russ Payne, Professor Guzel Khakimova, and Laura Toussaint.