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Jadrian (Miles) Sardiñas, PhD

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2025–2022 **Software Engineer — Ink Android Jetpack Library** — Google

- Developed color handling, latency metrics API, and animation effects.
- Wrote documentation on Android Jetpack development and digital color. Taught a seminar on computer graphics.

2022–2017 **Software Engineer — YouTube Live Video Infrastructure** — Google

- Led the infrastructure launches of the Go Live Together product and RTMPS streaming video ingestion. Collaborated with eng, SRE, product, and UX teams across Google. Debugged WebRTC header issues and stitched modern RPC APIs into legacy code with a conflicting concurrency model.
- In-house data analytics specialist and member of engineering oncall rotation.

2016, 2013 **Research Consultant** — Rhode Island Hospital (Bioengineering Lab, Orthopaedics Dept)

- Resolved topological bugs in 3D segmentation software for MRIs, allowing client researchers to measure cartilage thickness more precisely in pre-clinical trials.
- Built an extensible GUI application to allow non-programmers to use a custom software pipeline for MRI data processing.

2016–2015 **Instructor** — Phillips Academy (Math/Stats/CS Dept)

- Taught AP CS, *Software Design*, *Computer Graphics*, and *Data Structures*.
- Designed the graphics course from scratch: a bottom-up approach in Python/Numpy and WebGL.
- Advised two teams, of three students each, on independent term-long projects: *PACTF* and *Combinatorial Optimization*.

2015–2013 **Visiting Instructor** — Carleton College (Computer Science Dept)

- Taught *Intro*, *Data Structures*, *Discrete Math*, *Algorithms*, and *Software Design*.
- Designed and taught an elective: *Medical Image Analysis*. Significantly redesigned *Data Structures*.
- Advised five student research assistants for two trimesters; advised three teams of seniors on two-trimester capstone projects; academic advisor for fourteen majors for one year. Managed undergraduate graders for most courses.

2015–2006 **Graduate Researcher** — Brown University (Visualization Research Lab, Computer Science Dept)

- Designed a technique for model optimization in infinite-dimensional configuration spaces with both discrete and continuous parameters, supporting metaheuristics like simulated annealing.
- Created a mathematical model of brain structure and a GPU-accelerated algorithm to render synthetic MRI images from it.
- Collaborated across disciplines with scientists in Providence, RI; St. Louis, MO; Edinburgh; and Cape Town.
- Made frequent presentations, including over 25 one-hour talks given to my research group and others.

2013 **Instructor** — Brown University (Computer Science Dept)

- Taught *Intro to Computation for the Humanities and Social Sciences* and managed four undergrad TAs.

Education

2015 **PhD in Computer Science** — Brown University

- Dissertation: *A Multi-Scale Model of Brain White-Matter Structure and Its Fitting Method for Diffusion MRI*.

2008 **ScM in Computer Science** — Brown University

2006 **B.S. with Distinction in Computer Science, B.S. in Mathematics** — Duke University

Mentoring

2025–2017 **Career Mentor** — Google
- Mentored early-career software developers through team changes, role changes, and promotions.

2016 **Co-Lead Mentor** — Code for Philly
- Mentored a cohort of 12 early-career software developers in the DatJawn project.
- Designed a 20-week curriculum in version control theory, distributed systems, and software development.

2011–2009 **Academic Mentor** — New Urban Arts
- Mentored approximately a dozen high-school students in math and science at an open-door urban community art studio.

Skills

Programming and Markup Languages

- Professional: C/C++, Kotlin, Matlab, Python/Numpy, SQL, LaTeX.
- Proficient: GLSL, Java, compliant HTML, CSS.
- Familiar: Make, Bash, Javascript, Go, PHP, Perl, SVG, SuperCollider.

Software and Libraries

- Professional: Debian/Ubuntu Linux, Mac OS X, VS Code, Abseil, GoogleTest.
- Proficient: Windows XP, Eclipse, Photoshop, Inkscape.
- Familiar: OpenGL, JUnit, Git, Mercurial, Subversion, CVS, rsync, ClearCase.

Publications & Presentations

Journal Papers

- A. Gongvatana, R. Cohen, S. Correia, K.N. Devlin, J. Miles, H. Kang, H. Ombao, B. Navia, D.H. Laidlaw, and K.T. Tashima. "Clinical Contributors to Cerebral White Matter Integrity in HIV-Infected Individuals". *Journal of Neurovirology*, 17(5):477–486, 2011 .
- R. Boller, S.A. Braun, J. Miles, and D.H. Laidlaw. "Application of Uncertainty Visualization Methods to Meteorological Trajectories". *Earth Science Informatics*, 3(1–2):119–126, June 2010 .
- D.F. Keefe, D. Acevedo, J. Miles, F. Drury, S.M. Swartz, and D.H. Laidlaw. "Scientific Sketching for Collaborative VR Visualization Design". *IEEE Transactions on Visualization and Computer Graphics*, 14(4):835–847, Jul–Aug 2008 .

Refereed Posters, Workshops, and Invited Talks

- J. Miles and D.H. Laidlaw. "Predicting DTI Tractography Uncertainty from Diffusion-Weighted-Image Noise". Poster at ISMRM 2012.
- R. Boller, S. Braun, J. Miles, and D. Laidlaw. "Application of Uncertainty Visualization Methods to Meteorological Trajectories". Talk at NASA/AGU Earth and Space Science Informatics Workshop, University of Maryland, Baltimore County. August 2009.
- J. Miles. "A Specialized Inter-Curve Similarity Measure for Agglomerative Diffusion MRI Streamline Clustering". Invited talk at the NIH Section on Tissue Biophysics and Biomimetics. May 2009.
- J. Miles, R.A. Cohen, and D.H. Laidlaw. "Tradeoffs in Supersampling of DTI Metrics". Poster at ISMRM 2009.
- J. Miles, D.F. Keefe, D. Acevedo, F. Drury, S.M. Swartz, and D.H. Laidlaw. "Teaching Science in Virtual Reality with a Freehand 3D Illustration". Poster at IEEE InfoVis 2007.

Instructional Workshops

- J. Miles. "Regular Expressions, Text Processing, and Web Scraping", a two-hour Python tutorial for research librarians at The Humanities and Technology Camp, New England at Brown University. October 2012.
- J. Miles. "Fibbly Math Patterns", a one-hour classroom workshop for elementary- and middle-school–age students. Facilitated ten sessions total in Damariscotta, ME and Philadelphia, PA. November 2011 – January 2013.
- A. Gongvatana, J. Miles. "Diffusion MRI: Theory and Practice", a three-hour workshop in the Biostatistics Program, Department of Public Health, Brown University. October 2010.