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## OMOJU THOMAS MILLER

### skills

**Programming Languages:** Python, Prolog, C, C++, Ruby(basic), SQL  
**Frameworks:** XGBoost, NLTK, Pandas, Numpy, Scikit-Learn, Word2Vec  
**Version Control Systems:** Git  
**Project Management Systems:** Agile, Kanban

### projects

#### ReceiptdID

- Created a chained-multi-label, multi-class, hierarchical classification system.
- Build ensemble method that included over 200+ individual classifiers.
- Beat chance by 300%.

#### Identify Factors that Predict Intro CS Experience Based on Gender

- Designed a data-driven investigation of the experience of intro CS at UC Berkeley.
- Implemented four models: Decision Trees, Random Forest, SVM, and XGBoost.
- Exploited information gain and cover as a mechanism for model interpretability.

#### Hiphopathy

- Created a data science unit using rap lyrics for the [BJC-CS10](#) curriculum.
- Implemented curriculum using Jupyter notebook and Python NLTK package.
- Project ran on [edX MOOClet](#), *BJC.3x: Data, Information and the Internet*

#### Vocabulary Glossary - Android Development for Beginners course

- Co-Built **Android For All** beginners course in partnership with **Udacity** and **Google**.
- Designed explicit mental-models to communicate computation ideas.
- Course launched with over 50,000 students.

#### #ThisIsGrit

- Created #ThisIsGrit social media campaign as a response to under-matching problem.
- Created several videos of high-achieving historically underrepresented persons.
- Inspired first lady **Michelle Obama's** [Reach Higher](#) program.

#### Semantic Web Expert System Shell (SWEXSYS)

- Created an intelligent system platform capable of reasoning with multiple ontologies.
- Built system using Prolog and XPCE package.
- Adapted SWEXSYS platform to sensor fusion using Dempster-Shafer theory of uncertainty.

### profession experience

#### Insight Datascience - Data Science Fellow Palo Alto, CA | Jan 2017-Present

- Built a large-scale hierarchical classification model for a YC backed company.
- Scaled solution to accommodate growing taxonomy of item categories.

#### UC Berkeley - CSEd Doctoral Candidate Berkeley, CA | Dec 2013-May 2016

- Designed a machine learning, research study to investigate gender in intro CS.
- Developed a data science unit within a historical [intro CS course](#), CS10.

#### Google - Technology Portfolio Manager Mountain View, CA | Feb 2014-Dec 2015

- Co-led a \$15M CSEd portfolio. Grew the portfolio by 25%.
- Co-led the development of vocabulary glossary for Android Development course.

**ICSI<sup>1</sup> - Graduate Researcher** Berkeley, CA | Mar 2011-Dec 2012

- Built a conceptual metaphor [Semantic Wiki](#) capable of ingesting data in English, and Farsi.
- Contributed to the design of conceptual metaphor framework.

**UniversityNow - Data Scientist (Intern)** San Francisco, CA | Jun 2012 -Aug 2012

- Led a 3 person team responsible for creating an analytics console.
- Pulled and integrated data from two separate database management systems.

**TEDxEuclidAve - Founder and Curator** Berkeley, CA | Aug 2011-Aug 2012

- Led a 10 person team responsible for executing on the vision.
- Led strategy for [TEDxEuclidAve](#), a 100+ member conference, bringing together innovative thinkers across technology, design and entertainment in service of social entrepreneurship.

**Center for Advanced Sensors - Graduate Researcher** Memphis, TN | Aug 2003-Nov 2006

- Co-designed [OntoSensor](#), a sensor ontology using Semantic Web Ontology Language (OWL).
- Built an intelligent reasoning agent capable of reasoning with data in XML and RDF formats

**Thoughtware Learning Technologies - Software Engr** Memphis, TN | Aug 1999-Nov 2001

- Contributed to the development of an AI eLearning workforce development platform.
- Quality assurance for an eLearning management system.

## Advisory portfolio

**Reach - Advisor** Lagos, Nigeria | Jan 2016-Present

- REACH is a group savings tool. Use it with your friends, family, or any group with a common target, to save towards a financial goal
- Provide strategy around product market fit, and data.

**Learners Guild - Chair Advisory Board** Oakland, CA | Dec 2015-Present

- Learners Guild, a California B-Corp following the principles of holocracy, is a network of guild-style professional schools that transform students into high-skilled workers in one year.
- Built inaugural advisory board.

**All Star Code - Curriculum Advisor** New York, NY | Jan 2016-Dec 2016

- All Star Code (ASC) empowers young men with the skills, networks, and mindset they need to create new futures through technology.
- Served as a curriculum advisor to the summer immersion program.

**CODE2040 - Fellows Council Co-Chair** San Francisco, CA | Jan 2013-Dec 2013

- CODE2040 is a non-profit focused on increasing the number of underrepresented minorities in the high-tech economy by providing mentorship, direction and access to networks that were previously unavailable to them.
- Responsible for leading and supporting recruitment and scale strategies.

**Presidential Innovation Fellows - Strategist** The White House, Washington, DC | 2012

- The Presidential Innovation Fellows program brings the principles, values, and practices of the innovation economy into government.
- Served in volunteer capacity with CTO of the United States, Todd Park.

<sup>1</sup>International Computer Science Institute

education	Udacity - Machine Learning Nanodegree	(In Progress)
	UC Berkeley - Computer Science Education, Ph.D.	2016
	University of Memphis - Electrical and Computer Engineering, M.S.	2004
	University of Memphis - Computer Science, B.S.	2001
teaching experience	UC Berkeley - <i>Graduate Student Instructor</i>	Berkeley, CA   Spring 2013
	- Introduction to Cognitive Science	
	UC Berkeley - <i>Graduate Student Instructor</i>	Berkeley, CA   Spring 2011
	- Introduction to C++ programming	
	University of Memphis - <i>Adjunct Faculty</i>	Memphis, TN   Spring 2010
	- C programming for Engineers	
	University of Memphis - <i>Graduate Student Instructor</i>	Memphis, TN   Spring 2006
	- Computer Software Engineering	
publications	University of Memphis - <i>Graduate Student Instructor</i>	Memphis, TN   Spring 2005
	- Data Visualization	
	University of Memphis - <i>Graduate Student Instructor</i>	Memphis, TN   Spring 2004
	- Introduction to Computer Engineer Lab	
	<i>Conference proceedings</i>	
	Omoju Miller. 2016. "Gaining Insights into the Effects of Culturally Responsive Curriculum on Historically Underrepresented Students' Desire for Computer Science." <i>Proceedings of the 123rd ASEE Annual Conference, New Orleans, LA</i> .	
	D.J. Russomanno, C. Kothari and O. Thomas. 2005. "Building a Sensor Ontology: A Practical Approach Leveraging ISO and OGC Models." <i>The 2005 International Conference on Artificial Intelligence, Las Vegas, NV</i> 637–643.	
	D.J. Russomanno, C. Kothari and O. Thomas. 2005. "Sensor Ontologies: From Shallow to Deep Models." <i>Proceedings of the 37th Southeastern Symposium on Systems Theory, IEEE Press, Tuskegee, AL</i> 107–112.	
	O. Thomas and D.J. Russomanno. 2005. "Applying the Semantic Web Expert System Shell to Sensor Fusion using Dempster-Shafer Theory." <i>Proceedings of the 37th Southeastern Symposium on Systems Theory, IEEE Press, Tuskegee, AL</i> . 11–14.	
	O.A. Thomas and D.J. Russomanno. 2004. "SWEXSYS: A Semantic Web Expert System Shell." <i>Proceedings of the IASTED International Conference on Artificial Intelligence and Applications, part of the 23rd Multi-Conference on Applied Informatics, Innsbruck, Austria</i> 240–245.	
	<i>Workshops and Presentations</i>	
	Jennifer Arguello, Tiffany Price, Alexis Martin, Frieda McAlear, Omoju Miller, Dan Garcia. 2015. "Engaging Underrepresented Youth in Computer Science." <i>Computer Science Teachers Association (CSTA) in Grapevine, TX</i> .	
	Omoju Miller. 2015. "Towards a Global Framework for Culturally Resonant Learning." 2015 <i>Sage Assembly in Paris, France</i> .	

- Omoju Miller and Oluwole Solana. 2014. “From San Francisco to Johannesburg, introducing girls to Computer Science in Industry supported programs.” *2014 Grace Hopper Conference in Pheonix, AZ*.
- Daniel D Garcia, Brian Harvey, Tiffany Barnes, Dan Armendariz, Jon McKinsey, Zachary MacHardy, Omoju Miller, Barry Peddycord III, Eugene Lemon, Sean Morris, Josh Paley. 2014. “[AP CS Principles and the Beauty and Joy of Computing Curriculum](#).” *Proceedings of the 45th ACM Technical Symposium on Computer Science Education*, 746–746.
- Brian Harvey, Daniel D Garcia, Tiffany Barnes, Nathaniel Titterton, Omoju Miller, Dan Armendariz, Jon McKinsey, Zachary Machardy, Eugene Lemon, Sean Morris, Josh Paley. 2014. “[Snap!\(Build your own Blocks\)](#).” *Proceedings of the 45th ACM Technical Symposium on Computer Science Education*, 749–749.
- Omoju Miller, Jordan Arnesen, Eric Chu, Grayson Flood, Kevin Funkhouser, Alex Greenspan, Daniel Hsu. 2013. “Hiphopathy: A Computational Thinking Process to Encourage Empathy.” *2013 California Cognitive Science Conference, Berkeley, CA*.

#### *Essays and reviews*

- Frieda McAlear, Omoju Miller, Dan Garcia, Alexis Martin. 2016. “[Equity in Computer Science: From Exposure to Entrepreneurship](#).” *Computer Science Teacher’s Association (CSTA) Voice*, 9–10.
- Omoju Miller. 2014. “[Its Deeper than Rap, Toward Culturally Responsive CS](#).” *XRDS: Crossroads, The ACM Magazine for Students*, 28–30.
- Omoju Miller. 2013. “[Winning with Both Sides of the Coin](#).” *Coding Nation Report* 6–7.

#### **selected conference presentations since 2012**

- Invited speaker “What Makes a Coder.” Etsy, New York, New York, February 2017.
- Panelist “Moral Machines: How Philosophy can help AI Decide Right from Wrong.” Grace Hopper Celebration of Women in Computing, Texas, 2016.
- Keynote “15+ Years of Learning Computational Intelligence.” Annual OUSD Dinner with a Scientist, California, May 2016.
- Invited panelist “SPIE Women in Optics.” SPIE Photonics West Annual Conference, California, February 2016.
- Invited speaker “Breaking Barriers: Changing the Landscape.” Andela, Lagos, Nigeria, January 2016.
- Invited panelist “Behind the Click: Intersection of Women of Color in STEM and Social Justice.” Black Girls Code, California, December 2015.
- Keynote “Moonshot Thinking.” Joint Board of Advisors Meeting, Purdue School of Engineering and Technology, IUPUI, Indiana, October 2015.
- Keynote “Breaking Barriers: Changing the Landscape.” Youth Start Up Weekend at Castlemont High School, California, May 2015.
- Invited speaker, “Breaking Barriers: Changing the Landscape.” Office of Institutional Diversity, Harvey Mudd College, California, December 2014.
- Keynote, “[Inventing the Mythical Creature: Or How to Stay, Lead, and Delight in Tech as a Woman](#).” Annual Celebration of the IU Center of Excellence for Women in Technology (CEWiT), Indiana, October 2014.

Invited presenter, “Made With Code.” Annual Dreamforce Developer’s Conference, San Francisco, October 2014.

Invited presenter, “Inventing the Mythical Creature: Or How to Stay, Lead, and Delight in Tech as a Woman.” Focus 100, New York, September 2014.

Invited presenter, “#ThisIsGrit.” **White House** Department of Education EdDataPalooza, Washington DC, January 2014.

Invited speaker, “Unintended Bias.” Departmental Heads Gathering, **White House**, Washington DC, February 2013.

Invited panelist, “Social Justice in the Age of Big Data.” Swinging and Flowing: Inclusion and Diversity in the Age of Data. The Data and Democracy Initiative @ CITRIS Berkeley, Berkeley, April 2012.

grants,  
honors,  
& awards

Member (Expert Network: AI), World Economic Forum, Davos, Switzerland, March 2017.

Levo 100: Transformer, Levo League, California, 2015.

Bloomberg Beta Future Founder, Bloomberg Beta, California, 2014.

Winner, White House Dept of Edu EdDataPalooza, Washington DC, January 2014

Kapor Capital Fellows, California, 2012.

Invited participant, TEDxSummit, Doha, Qatar, 2011.

Google CS Grad Forum Scholarship, California, 2010.

SESAME Graduate Division Fellowship, UC Berkeley, 2010–2011

Herff College of Engineering fellowship, Memphis, 2002–2006.

press,  
podcast,  
& coverage

[Can You Stump Nick Craver?](#), Featured in Stack Overflow Podcast #91, October 2016.

[Everybody’s Got Questions \(Yup\)](#), Featured in Science with Tom parody rap video, May 2016.

[The Science of People in Tech](#), JavaScript Air Podcast, May, 2016.

[Learners Guild](#), [Investing in You to Code](#), HBCU to Startup Podcast, March, 2016.

[Redesigning Computer Science 101 Education with Omoju Miller](#), The Hanselman Minutes Podcast: Fresh Air for Developers, August, 2015.

[RoadTrip Nation: Omoju’s Open Road](#), Pivot TV, March, 2015.

[African Americans on the role of Higher Education in Innovation](#), #BITTechTalk, December, 2014.

[Fortune-Tellers, Step Aside: Big Data Looks For Future Entrepreneurs](#), NPR’s All Tech Considered, October 5, 2014.

[Q&A with CS Ed Reformer and PhD Candidate Omoju Miller](#), Berkeley Bytes, March 11, 2014.

product experience	Unow Learning Analytics Platform - Description	2012
	Beyond Blocks - Description	2013
	Hipopathy - Description	2014
	Uguru - Description	2014
	ThisIsGrit - Description	2014
	Learners Guild - Description	2015
	Beginners Andriod - Description	2015
project experience	TEDxEuclidAve - Description	2011
	CSinMedia - Description	2015
	Donors Choose - Description	2015
	Girls Who Code - Description	2015
	Technovation - Description	2015
	CODE2040 - Description	2015