James Logan Mayfield

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Education

2003–2012 **PhD**, *University of Cincinnati*, Cincinnati, OH.
Computer Science and Engineering
Thesis Title: *A Parameterized Framework for Quantum Computation*
Advisor: Dr. Anca Ralescu

1999–2003 **B.A.**, *DePauw University*, Greencastle, IN.
Major: Computer Science. Minor: Jazz Studies.

Employment

2013–present **Associate Professor**, *Monmouth College*, Monmouth, IL.
A tenured position with teaching duties at all levels of the undergraduate CS curriculum, contributions to the college's general education program, and general service to the college.

2007–2013 **Assistant Professor**, *Monmouth College*, Monmouth, IL.
A tenure-track position with teaching duties at all levels of the undergraduate CS curriculum, contributions to the college's general education program, and general service to the college.

2005–2007 **Adjunct Faculty**, *Wilmington College, East Gate Branch*, Cincinnati, OH.
An adjunct position teaching a variety of standard undergraduate CS offerings.

2004 – 2006 **Teaching Assistant**, *University of Cincinnati*, Cincinnati, OH.
A teaching assistantship with primary instruction duties for an introductory CS course offered in a compressed $\frac{1}{2}$ quarter format.

Awards and Grants

2012 Hardware Donation Recipient. NVIDIA Academic Partnership Program

Teaching

Monmouth **COMP160 – Introduction to Computer Science**, Fall 2007–2009.
COMP161 – Introduction to Programming, Spring 2008–2015.
COMP188 – Intermediate Functional Programming, Fall 2011.
COMP163 – Data Structures, Fall 2007.
COMP220 – Data Structures, Spring 2009,Fall 2009–2013,2015.
COMP230 – Computer Architecture and Organization, Spring 2008,Fall 2012.
COMP210 – Object-Oriented Programming, Spring 2010–2014.

COMP350 – Topics.
- Theoretical Computer Science (Fall 2012)
- Concurrency and Parallel Programming (Spring 2011)
- Web Programming (Spring 2009)
- Security and Cryptography (Spring 2008)

COMP340 – Analysis of Algorithms, Spring 2010,Spring 2012,Spring 2014.

COMP325 – Organization of Programming Languages, Fall 2009,Fall 2011,Fall 2013,Fall 2015.

COMP343 – Artificial Intelligence, Fall 2008.

COMP310 – Database Theory and Design, Fall 2008.

COMP400 – Senior Project, Fall 2007,Fall 2008.

COMP401 – Senior Project: Research, Fall 2009–2015.

COMP401 – Senior Project: Implementation, Spring 2010–2015.

COMP420 – Independent Study.
- Web Development (Fall 2015)
- Machine Learning (Spring 2012)
- Computer GO (Spring 2011)
- Smart-Phone Application Development (Spring 2011)
- Android Development (Spring 2010)
- Cryptography (Fall 2009)
- System Administration (Spring 2009)
- Software Engineering (Spring 2008)

COMP410 – Research.
- Code Optimization in GNU Octave (Fall 2014)
- Reversible Boolean Circuit Synthesis (Spring 2013)
- Simulation Of Quantum Circuits (Fall 2012)

INTG101 – Introduction to the Liberal Arts, Fall 2010–2011.

INTG388 – Artificial Intelligence and the Singularity, Spring 2015.

Wilmington

CMS 300 – Java 5 Programming, Summer 2005.

CMS 301 – Software Engineering, Spring 2006.

CMS 350 – Compiler Theory, Fall 2005.

CMS 360 – Computer Organization, Summer 2005.

CMS 390 – Artificial Intelligence , Spring 2004,Spring 2006.

CMS 400 – Network Theory, Fall 2006.

CMS 401 – Software Engineering Project, Fall 2005–2006.

CMS 405 – Web Technologies Studies, Spring 2007.

CMS 380 – Operating Systems, Spring 2007.

Cincinnati

ECES 122 – Computer Science II, Summer 2004–2006.

Monmouth Service

2015 Co-chair of the President's working group for Sustainability

2014 Chair of a search committee for a tenure-track hire in Mathematics

2013–2015 Faculty and Institutional Development Committee Member

2008–2013 Faculty Assessment Committee Member

2010–2011 Faculty Assessment Committee Chair

2011-2013 Member of the Board of Chapter Advisors for the local chapter of the fraternity of Phi Gamma Delta.

2009-2013 Advisor for Monmouth Computer Science Club (MonCSter)

2014-2015 Advisor for Local Student Chapter of the ACM (formerly MonCSter)

2010–2011 Member of the committee that developed a new model for INTG101, the first year seminar at Monmouth

2008 Member of summer working group on challenges facing the Liberal Arts

2008 Member of working group that attended a National Institute for Technology in Liberal Education (NITLE) conference in Georgia on technology and learning spaces

Professional Service

2011–2015 Program Committee: Midwest Artificial Intelligence and Cognitive Science (MAICS) Conference

2008–2009 Program Committee: Midwest Artificial Intelligence and Cognitive Science (MAICS) Conference

2009 Program Committee: North American Fuzzy Information Processing Society (NAFIPS) Conference

2009 Planning Committee: National Institute for Technology in Liberal Education (NITLE) Workshop on Tablet PCs in Education

Research Publications and Software

[1] James Logan Mayfield. Quantum circuit sandbox, October 2015. URL: `https://jlmayfield.github.io/quantumCircuitSandbox/`, `doi:10.5281/zenodo.32617`.

[2] James Logan Mayfield and Anca L Ralescu. Parameterized quantum gates and multidimensional uncertainty of information. In *Proceedings of the 2006 North American Fuzzy Information Processing Society Conference*. NAFIPS, 2006.

[3] James Logan Mayfield and Anca L Ralescu. Universal amplitude/phase gates for quantum algorithm design. In *Proceedings of the Seventeeth Midwest Artificial Intelligence and Cognitive Science Conference*, pages 79–84. MAICS, 2006.

[4] James Logan Mayfield and Anca L. Ralescu. Computation with two dimensions of uncertainty: Fuzzy computers. In *Proceedings of the 2007 North American Fuzzy Information Processing Society Conference*. NAFIPS, 2007.

[5] James Logan Mayfield, Fred Witzig, and Emma Vanderpool. Refuting the claim that alexander garden is arminius. In Progress Manuscript, 2015.

[6] Anca Ralescu and James Logan Mayfield. Generalization of common gates for quantum computation. In *Proceedings of the 2005 North American Fuzzy Information Processing Society Conference*. NAFIPS, 2005.

[7] Anca L. Ralescu and James Logan Mayfield. More on generalization of one and two qubit gates. Unpublished Manuscript, 2005.