Michael Maynord

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EDUCATION

University of Maryland, College Park   College Park, MD
Ph.D., Computer Science   Expected Fall 2018

University of Wisconsin, Madison   Madison, WI
B.S., double major in Computer Science and Mathematics, Comprehensive Honors, Phi Beta Kappa   Spring 2012
- GPA: 3.78 / 4.0

RESEARCH EXPERIENCE

Lab of Professor Yiannis Aloimonos   **Fall 2015 to present**
University of Maryland, College Park, MD
- Presently pursuing research exploring the relation between representations at different levels of abstraction within processes of visual perception.
- Drafted an outline of Feedback for Perceptual Refinement (FPR), in collaboration with fellow Ph.D. student Anupam Guha - an architecture which won a 2016 Qualcomm Innovation Fellowship, through which I am presently funded.

Lab of Dr. David Aha   **Summer 2013 to Summer 2016**
Naval Research Laboratory, Washington, D.C.
- **Summer 2013:** Drafted a conceptualization of "Goal Reasoning" - the notion that an agent can be made more robust and more capable by structuring that agent's processes around dynamically changing goals.
- **Summer 2014:** Developed a method for rapid plan recognition based on projecting plans into Euclidean space and hierarchical clustering.
- **Summer 2015** - **Summer 2016:** Implemented a prototype of the Image Surveillance Assistant architecture – a configurable perception pipeline spanning multiple levels of representation.

Lab of Professor Don Perlis   **Fall 2012 – Spring 2015**
University of Maryland, College Park, MD
- **Spring 2013, Fall 2013, and Spring 2014:** Funded as a GRA.
- Involved in multiple efforts to realize Goal Reasoning.
- Involved in work on robotics and drones.

Lab of Professor Xiaojin (Jerry) Zhu   **Fall 2011 – Spring 2012**
Undergraduate Research Assistant
University of Wisconsin, Madison, WI
- Collaborated on the design and creation, based on machine learning, of an "image-to-text" application to aid those with language developmental disorders.

Lab of Professor Jignesh Patel   **Summer 2010 – Spring 2012**
Undergraduate Research Assistant
University of Wisconsin, Madison, WI
- Principle developer of Themis, an application for combating laptop theft employed by the University of Wisconsin Police Department.

TEACHING and MENTORING

Teaching Assistant
University of Maryland, College Park, MD
- Critiqued and provided input on the creation of projects, tests, and quizzes.
- Interacted with students on and off-line to guide understanding and answer questions.
  - Held office hours
  - Interacted via Piazza and email
- **Taught discussion sections for CMSC 131**   **Fall 2012, Spring 2013, Spring 2015**
  - Lectured in discussion on material complementary to that covered by the course instructor
  - Walked through concept and code demonstrations
  - Managed in-section coding exercises and quizzes
- **CMSC 421, CMSC 132**   **Fall 2014, Spring 2016 (respectively)**
  - Held grading responsibilities

Mentor   **Summer 2016**
Naval Research Laboratory, Washington, D.C.
- Coached two undergraduate interns who were assigned to me as mentees.
- Explained details and concepts pertaining to a project on regularizing object detections produced by a Convolutional Neural Network.
- Collaborated on conceptualization and implementation of this project with interns and a visiting professor.
- Provided guidance on performing academic research, including reviewing literature, systematically approaching a research challenge, evaluating results, and writing up results.

FELLOWSHIPS, GRANTS, and AWARDS

University of Maryland, College Park, MD
- **2016 Qualcomm Innovation Fellowship**, split between myself and my colleague Anupam Guha. 8 out of 129 proposals from 18 of the top CS schools were selected. https://www.qualcomm.com/invention/research/university-relations/innovation-fellowship/winners   **$100,000, Fall 2016 – Spring 2017**
- **John Gannon Fellowship**   **$300, Spring 2015**
- **Dean's Fellowship**   **$10,000 Fall 2012 – Spring 2014**

University of Wisconsin, Madison, WI
- Graduated with **Comprehensive Honors** (completed honors in the liberal arts and honors in the CS major tracks - http://honors.ls.wisc.edu/)
- Inducted into **Phi Beta Kappa**
- Funded by two NSF Research Experiences for Undergraduates (REU) Grants
  - Project on which I was funded by **REU Grant: IIS-0929988**   **Summer 2010 – Spring 2012**
  - Project on which I was funded by **REU Grant: IIS-0711887**   **Fall 2011 – Spring 2012**
- Awarded **Fulbright-Hays Scholarships** for study in Russia
  - Study in St. Petersburg   **$4000, Summer 2011**
  - Study in Moscow   **$3500, Summer 2009**
- UWPD **Chief's Award** for being principle developer of Themis, an anti-theft application for laptops, as part of a collaboration between UW and the UW Police Department.
- One of a team of three who won third place and the **Wisconsin Idea award** in the NEST (Nest for Emerging Software Technologies) software competition. https://contest.cs.wisc.edu/past/BB-2010.pdf   **Fall 2010**

PUBLICATIONS and PRESENTATIONS

Papers:
1. **Maynord, M.**, Aha, D. W., & Bhattacharya, S. (2016) Image Surveillance Assistant Architecture: Status and Planned Extensions. In 2016 IJCAI Deep Learning for Artificial Intelligence Worskshop.
2. **Maynord, M.**, Bhattacharya, S., & Aha, D. W. (2016, March). Image Surveillance Assistant. In 2016 IEEE Winter Applications of Computer Vision Workshops (WACVW) (pp. 1-7). IEEE.
3. **Maynord, M.**, Vattam, S., & Aha, D. W. (2015, June). Increasing the runtime speed of case-based plan recognition. In The Twenty-Eighth International Flairs Conference.
4. Paisner, M., Cox, M. T., **Maynord, M.**, & Perlis, D. (2014). Goal-Driven Autonomy for Cognitive Systems. In Proceedings of the 36th Annual Conference of the Cognitive Science Society (pp. 2085-2090).
5. **Maynord, M.**, Cox, M. T., Paisner, M., & Perlis, D. (2013, December). Data-driven goal generation for integrated cognitive systems. In 2013 AAAI Fall Symposium Series.
6. Paisner, M., **Maynord, M.**, Cox, M. T., & Perlis, D. (2013, December). Goal-Driven Autonomy in Dynamic Environments. In Goal Reasoning: Papers from the ACS Workshop (p. 79).
7. Cox, M. T., **Maynord, M.**, Paisner, M., Perlis, D., & Oates, T. (2013). The integration of cognitive and metacognitive processes with data-driven and knowledge-rich structures. In Proceedings of the Annual Meeting of the International Association for Computing and Philosophy. IACAP-2013.
8. Perlis, D., Cox, M. T., **Maynord, M.**, McNany, E., Paisner, M., Shivashankar, V., ... & Caro, M. (2013, December). A Broad Vision for Intelligent Behavior: Perpetual Real-World Cognitive Agents. In 2013 Annual Conference on Advances in Cognitive Systems: Workshop on Metacognition in Situated Agents (p. 1).

Technical Reports:
1. 2013 NRL report: **Maynord, M.** Aha, D.W., Wilson, M., & Cox, M.T. (2013). On goal reasoning (Technical Note AIC-13-143). Washington, DC: Naval Research Laboratory, Navy Center for Applied Research in Artificial Intelligence.
2. UW-Madison report: **Michael Maynord**, Jitrapon Tiachunpun, Xiaojin Zhu, Charles R. Dyer, Kwang-Sung Jun, and Jake Rosin. An Image-To-Speech iPad App. Department of Computer Sciences Technical Report TR1774, University of Wisconsin-Madison. 2012.

Poster Presentations:
1. Deep Learning for Artificial Intelligence Workshop at IJCAI 2016, "Image Surveillance Assistant Architecture: Status and Planned Extensions."
2. ACS-13 workshop on Goal Reasoning: "On the Definition and Desirability of Goal Reasoning"
3. 14th Annual Undergraduate Symposium, University of Wisconsin Madison, April 2012, "An Image-To-Speech iPad App."

Talks:
1. Presented "Feedback for Vision" - finalist presentation for the 2016 Qualcomm Innovation Fellowship, in collaboration with Anupam Guha.
2. Presented "Image Surveillance Assistant" at the Winter Applications of Computer Vision Workshops, 2016.
3. Presented "Increasing the runtime speed of case-based plan recognition" in the CBR track of FLAIRS-28: http://users.csc.tntech.edu/~weberle/FLAIRS-28/FLAIRS-28%20-%20Program.pdf
4. Presented "Data-driven goal generation for integrated cognitive systems" at the 2013 AAAI Fall Symposium Series: http://www.aaai.org/ocs/index.php/FSS/FSS13/paper/view/7618

CURRICULUM SUMMARY

Notable Coursework
University of Maryland, College Park, MD
- CMSC726 – Machine Learning
- CMSC828D – Human Level AI and Computational Cognitive Neuroscience
- CMSC727 – Neural Modeling
- CMSC828J – Linear Subspaces and Manifolds in Computer Vision and Machine Learning
- CMSC828N – Logical Aspects of AI
- CMSC828Y – Vision for Cognitive Robots: Recognition, Navigation and Manipulation

Notable Coursework
University of Wisconsin, Madison, WI
- Math 331 – Intro to Probability and Markov Chain Model
- CS540 – Intro to Artificial Intelligence
- CS638 – Undergrad Topics – Computing – Intro Medical Image Analysis
- CS760 – Machine Learning (graduate level course)
- CS761 – Advanced Machine Learning (graduate level course)
- CS838 – Computational Cognitive Science (graduate level course)