Chair’s Message

Dear CS alumni, friends, and colleagues:

We just celebrated another commencement, the 28th for me here. Yes, every commencement is a celebration. Not just because another academic year came to its conclusion. (That too!) But – more than anything else – because each commencement gives the world a gift: The gift of a new cadre of people with new skills, and with new energy, who are ready to get out there and offer us new great things. This year we – the CS Department – sent to the world four newly-minted PhDs, 44 new MS degree holders, 84 new BS holders, 37 MSIT, 179 BSIT, and 23 ASIT. With a shortage of more than half a million computer science and information technology professionals this might sound like a drop in the bucket. And it is. But drop-by-drop the bucket will be filled up (or, at least, made less empty). In the meantime, this new blood (and brains) will energize an industry that is already high-energy – perhaps the highest energy. So, before anything else, I’d like to congratulate our graduates. We are proud of you! And I’d like to congratulate whoever is going to hire them – or has already done so (our graduates get snapped up rapidly – as you probably know): You will soon be proud of them too. And of course, their families: no doubt they are proud, but also relieved. (I know, I was there not-so-long ago.)

This commencement is a special celebration for me: it is the first one as a Chair. (As some will quip: “you have survived the first year ...”) And, in addition to those 371 new “children,” we have much more to celebrate. We are looking forward to celebrating our new additions to the faculty, Yongfeng Zhang and Matteo Cimini, who will join us in September. After the departure of six faculty members since 2014 to retirement or other endeavors, we had to compete with a lot of fine CS departments world-wide, as well as companies, all starving to hire the same talented people we have been looking for. Last year we were able to celebrate Wenjin Zhou’s and Yelena Rykalova’s joining us. But with a student population that has doubled since 2013, and is expected to continue growing at 20% (or more) year-over-year, this is another “drop in the bucket.”

As much as we are celebrating our new faculty additions, we are bracing for another round of fierce competition as we will try to hire more faculty. We have to, so we can continue celebrating more graduates during each year’s commencement.

For now, we are handing our new graduates to you as they join the ranks of UML CS Department alumni. Please embrace them into your fold.

Haim Levkowitz, Ph.D.
Chair and Associate Professor
haim@cs.uml.edu
978-934-3654
Faculty Highlights

**Guanling Chen** is co-PI working with PI Prof Yuan Zhang (Nursing) on a $8000 seed grant from the College of Health titled “Using Smartwatch to Investigate Health Behaviors of Nightshift Nurses.” They aim to use smartphone/smartwatch sensing technology to collect and analyze Lowell General Hospital’s nightshift nurses’ health behaviors.

**Guanling Chen** was Chair of the Technical Program Committee for the 14th IEEE International Conference on Ubiquitous and Intelligent Computing (UIC), San Francisco, CA, August 2017.

**Guanling Chen** taught a service-learning course (Mobile App Programming) in which student teams developed apps for community partners, including a registration management app for a non-profit Andover Chinese School and a volunteer coordination app to be piloted by Greater Lowell Health Alliance.

**Tingjian Ge** was PI on a grant, “BIGDATA: Collaborative Research: F: Association Analysis of Big Graphs: Models, Algorithms and Applications,” for $257,430, from the National Science Foundation, 9/1/2016 to 8/31/2019. The goal of the project is to study the event associations and correlations in large dynamic graphs, such as social networks, traffic networks, and communication graphs.

**Tingjian Ge** served as the Session Chair of a research session at a major database conference – IEEE International Conference on Data Engineering (ICDE 2016) in Helsinki, Finland, in May 2016.

**Haim Levkowitz** survived his first year as department chair.


**Benyuan Liu** gave a colloquium talk at the Computer Science Department of WPI in December 2016, titled “Who is dating whom: user behavior characterization, prediction, and recommendation.”

**Benyuan Liu** was Co-General Vice-Chair of the International Performance Computing and Communications Conference (IPCCC), 2017, San Diego.

**Fred Martin** was an invited presenter at Autodesk Design Computing Symposium, a full-day event held on November 16, 2016 in Las Vegas, NV as part of Autodesk’s annual conference. The Design Computing Symposium focused on ways that computing is changing how we conceive, design, and create in our world. Martin presented a vision of democratizing computing by empowering middle school students to create mobile apps. His presentation situated the his research work in a 50-year history of educational computing research.
Since 2014, Fred Martin has been serving as an elected representative to the board of the Computer Science Teachers Association (CSTA)—an international non-profit formed by the ACM to advance the interests of K-12 computer science teachers. Last July, he was elected as chair of the board. He will begin his two-year term in this position on July 1, 2017.

Jay McCarthy served on the Massachusetts Digital Literacy and Computer Science Implementation Panel for the new teaching license for Massachusetts.

Jay McCarthy organized a meeting of the New England Programming Languages Symposium at UMass Lowell in June.

Jay McCarthy added a fourth child to his family and is very excited about it.

Anna Rumshisky received an NSF CAREER grant, “Developing an Underspecified Representation for Temporal Information in Text,” for $499K. She proposed new ways to represent and extract temporal information from text in order to enable automated reasoning about the order and timing of described events.

Anna Rumshisky was Lead Organizer / Chair of the Clinical NLP Workshop at COLING 2016, Osaka, Japan.


Undergraduate researchers in Anna Rumshisky’s Text Machine Lab, Willie Boag and Renan Campos were first authors on a full paper at the main venue in our field, ACL 2016 conference in Berlin, Germany.

Due to efforts of Anna Rumshisky’s Text Machine Lab, UML served as one of the university hosting site for the North American Computational Linguistics Olympiad (NACLO) for high school students in January 2017.

Yelena Rykalova was a reviewer for and served on the steering and advisory committee for CNS’17, 20th Communications and Networking, Simulation Symposium, Spring Simulation Multi-conference 2017, April 23 – 26, 2017 Virginia Beach, VA.

Jie Wang served as a final judge for the Interdisciplinary Contest in Modeling (ICM), March 17-19, 2017. Bedford, MA. Reviewed contest papers in the final round.

Jie Wang served as a final judge for the Mathematical Contest in Modeling (MCM), March 31-April 2, 2017. Monterey, CA. Reviewed contest papers in the final round.

Jie Wang gave an invited presentation entitled Computational Complexity in Big Data Med Research. Quantitative Health Sciences, University of Massachusetts Medical School, September 6, 2016.

Jie Wang served as Editor-in-Chief for Analysis and Research on Mathematical Modeling.


Jie Wang received $173,039 as PI from Wantology LLC to continue his project on Mining and Processing Public Big Data.

Jie Wang received $194,296 as PI from Tianhan Technology, Inc, to work on a project on Mathematical Modeling for College Admission Gaokao Scores over Big Data.

Jie Wang received $14,000 from a private donation as PI to work on his research projects under his discretion.

Holly Yanco was PI on a grant, “NRI: Collaborative Research: Cooperative Control of Humanoid Robots for Remote Operations in Nuclear Environments,” from the Department of Energy, Office of Environmental Management (DOE-EM), 9/28/16 – 9/27/19, for $1,532,850. In this research, we are investigating the use of our NASA Valkyrie robot for use in assisting with nuclear waste cleanup and glovebox work.

Wenjin Zhou took five female students (Tejaswini Gaddam, Jingwen Wang, Kavya Kumar Vallurupalli, Liqun Shao, and Allison Rossetto) with full support to the CRA-Women Graduate Cohort Workshop in Washington DC, April 7-8th, 2017.
New Gainley and Hart Scholarship

Brianna Gainley, a computer science major from Burlington, MA, was the first member of the Class of 2016 to receive her diploma – in a special ceremony held last March after she learned that the osteosarcoma she had battled throughout her college years was terminal. Gainley died on April 23, surrounded by her family, including her parents, Frank ’86 and Maureen ’92, ’97, and her fiancé, Ryan Hart ’16. A few weeks later, at the official UMass Lowell commencement, Chancellor Jacquee Moloney honored Gainley, calling her “a young woman whose hard work, dedication and perseverance truly exemplified the UMass Lowell spirit.”

Diagnosed with a rare form of bone cancer during her freshman year, Gainley spent the next five years undergoing chemotherapy. But in between her treatments and surgeries, she continued to pursue her degree, while completing internships and helping the UMass Lowell robotics team win a national title.

Her family has created the Brianna T. Gainley and Ryan C. Hart Teamwork Scholarship to benefit computer science majors. To contribute or for information about creating your own endowed fund, please contact the Office of University Advancement at 978-934-2223.

Selected Student Researcher Accomplishments

Yiqi Bai defended her PhD dissertation in early June. She will join Facebook Seattle after completion. Advisor: Jie Wang.

Dan Brooks completed a PhD from 2014 to 2017. His dissertation title was, “A Human-Centric Approach to Autonomous Robot Failures.” He will be working for Toyota Research in Cambridge, MA. Advisor: Holly Yanco.

Farzeen Harunani completed her MS thesis “AppVis: Enabling Data-Rich Apps in App Inventor” (December 2016). She will be joining MIT as a member of the App Inventor team as education staff. Advisor: Fred Martin.

Ming Jia is defended his PhD dissertation in early June. He will join Facebook Seattle after completion. Advisor: Jie Wang.

John Kilgo graduated as an undergraduate Honors student. Advisor: Tingjian Ge.

Carlos Ibarra Lopez was an MS student from January 2015 through December 2016 (and undergraduate exchange student in 2013). His thesis title was, “Simultaneous Human-Robot Command and Localization.” He will be starting at Google in Mountain View, CA in July 2017. Advisor: Holly Yanco.

Gerald Pipes completed an undergraduate Honors thesis on mechanical proof assistants. Advisor: Jay McCarthy.

Tyler Puleo, a CS/EE double major who graduated in May 2017, is working for Knightscope, a Silicon Valley robotics startup that makes robots for security. Tyler worked in Fred Martin’s lab and completed the university’s Robotics Minor. Advisor: Fred Martin.

Liqun Shao, a PhD student, accepted an internship from Google and will join Google New York from May to August 2017. Advisor: Jie Wang.

Mark Sherman earned his PhD in May 2017. His dissertation title was “Detecting Student Progress during Programming Activities by Analyzing Edit Operations on their Blocks-Based Programs”. He will be joining MIT as a member of the App Inventor team as a postdoctoral researcher. Advisor: Fred Martin.

Selected Faculty and Student Publications


Haoyi Xiong, Daqing Zhang, Guanling Chen, and Laura E. Barnes. Near-Optimal Incentive Allocation for Piggyback Crowdsensing. IEEE Communications, Special Issue on Sustainable Incentive Mechanism for Mobile Crowd Sensing, Accepted, February 2017.


Zheng Li and Tingjian Ge. History is a mirror to the future: Best effort approximate complex event matching with insufficient resources. In the Proceedings of the VLDB Endowment (PVLDB journal), Volume 10, Issue 4, and to appear in the 43rd International Conference on Very Large Data Bases (VLDB 2017), Munich, Germany, August 2017.

Chunyao Song, Xuanming Liu, Tingjian Ge. Top-k Frequent Items and Item Frequency Tracking over Sliding Windows of Any Sizes. In the Proceedings of the IEEE 33rd International Conference on Data Engineering (ICDE 2017), San Diego, California, USA, April 2017.


Lijun Ni, Diane Schilder, Mark Sherman, and Fred Martin. Computing with a community focus: outcomes from an app inventor summer camp for middle school students. Journal of Computing Sciences in Colleges, 31(6), June 2016, p. 82–89.


Please contact Assoc. Prof. Jay McCarthy at jmccarth@cs.uml.edu with alumni news for next issue.

**Learning with Purpose**

* A newsletter from the  
  Department of Computer Science  
  Univ. of Massachusetts Lowell  
  Olsen Hall, 198 Riverside Street  
  Lowell, MA 01854

---

Because of you, UMass Lowell students can achieve their dreams. Your contribution helps students acquire the knowledge and skills essential for their careers. Through your support, they graduate work ready, life ready, and world ready. Gifts to the Computer Science Department enable faculty and staff to enhance academic programming, keep equipment up-to-date, and fund research.

Yes, I would like to support UMass Lowell with a gift.

- $500  - $250  - $100  - $50  - Other

Please designate my gift to:

- Department of Computer Science
- Costello Robertson Family Scholarship
- Patrick D. Krolak Innovation Endowment
- Other: ________________________________

- Check made payable to UMass Lowell is enclosed.
- Please charge my gift of: $____________________
  MC  VISA  Discover

     City_________________ State_______ Zip_______

     Telephone _____________________________

     Email ________________________________

To make your gift online, visit: www.uml.edu/givenow

Name____________________________________

Graduation Year _________________

Address ______________________________________

_________________________________________

City_________________ State_______ Zip_______

Telephone _____________________________

Email ________________________________

Signature________________________________

My employer’s (or my spouse’s) matching gift form is enclosed