

Faculty Spotlight

Faculty Profile: Dr. Ming C. Lin

Dr. Ming Lin's academic pursuits lie in virtual reality (VR), but her motivations are grounded in beliefs more empirical. Her experience has taught her that in the future, VR technology will help us plan cities and conquer disease; that rejection can open unexpected doors; and that teaching is actually an excellent exercise in learning. Yet these known truths are also underscored by a tenet decidedly unknown: possibility. It's "what could be" that has fueled Ming's research and helped her find success throughout her career, now as UMD's Elizabeth Stevinson Iribe Chair of Computer Science. "I'm an idealist," she says. "Anything is possible; [only the] universe is the limit." That sense of possibility also brought her to Maryland, an institution she feels is solidifying its place in what could be the "East Coast Cyber Valley." Below, Ming talks about her research in VR and its wide applications, where she hopes to take her department, and why she's excited about its new home, the Brendan Iribe Center for Computer Science and Innovation:



When did you first become interested in virtual reality and robotics? I first started to learn about robotics in one of my first-year graduate courses with Dr. Ron Fearing at UC Berkeley. The course covered all aspects of robotics and I did a project of my own choosing to research a topic on force sensing, which resurfaced in my research on haptic (or touch-enabled) rendering for VR years later. Immediately after the class, I started to search for a Ph.D. advisor and I ended up working with Professor John Canny, an internationally renowned young researcher in robot motion planning. Working with John was the beginning of decades of my research in robotics.

Interestingly, what got me into VR was a rejected proposal. My Ph.D. dissertation on collision detection and proximity queries for robotics and animation is reasonably well known and the software systems based on my Ph.D. thesis and its derivative works have been used in both robotics and VR widely. However, when I returned to academia as an assistant professor at the University of North Carolina-Chapel Hill, one of my first proposals was rejected. As someone who received the NSF CAREER Award before leaving academia in the mid-90s, I went through

some “soul-searching” and decided to extend my earlier work in a rather ambitious direction to design new algorithms for haptic rendering in VR. My next few proposals on haptics supported by NSF were successful and helped me launch my research in haptics and VR.

When people think of virtual reality, the first thing that often comes to mind is entertainment, such as video games. Yet your research has helped to significantly expand the application and understanding of VR. Where do you see it making novel impacts? I have always believed that the success of VR depends on the “killer apps” that millions will adopt to realize its potential. VR offers infinite possibilities for us to explore, to experiment, to create, to design, to imagine, and to experience through a “digital reality” - either based on the real or imaginary world. Many people focus on the visual aspect of VR, which is understandable, given that vision tends to dominate other senses. However, for a truly immersive “ultimate display” like VR, it should engage as many senses as possible: sight, touch, sound, smell, and taste. The multi-modal experience offered by VR is one aspect that differentiates it from other technologies. But to enable us to go beyond ‘reliving’ an experience, to ponder “what if”, and to search through many other possibilities, VR needs to and can examine and evaluate these different “alternative realities.” That is the power of VR.

My research explores the applications of VR for creating smarter cities, practicing virtual procedures and medical analytics for improved healthcare, designing personalized apparel through virtual try-on, and experiencing autonomous vehicles through cyber-driving. I believe that VR will make its impact in every aspect of our life, from healthcare, e-commerce, design and prototyping, training and mission rehearsal, to large-scale urban planning.

What is something you’ve discovered through your work that you think everyone should know? For a faculty member in an academic career, the most amazing experience in research and teaching is the never-ending discovery and learning for life.

What brought you to Maryland? There are multiple factors that brought me here. First, UMD’s world-class faculty, especially in computer vision and AI/ML, which my current research directions are expanding toward. Also, the inter- and multi-disciplinary nature of research programs here, facilitated by collaborative research institutes and centers. UMD’s strategic geographical proximity to the national capital, with federal agencies and corporations nearby makes it well-poised to be the part of the future “Cyber Valley” on the East Coast. UMD also has a committed and passionate community of alumni, parents, and students - the Brendan Iribe Center for Computer Science and Innovation is a reflection of these engaged groups. Together, these factors highlight the tremendous potential of growth for the department, the university, and the region at large, as well as some tremendous, yet exciting challenges for me as a researcher, an entrepreneur, and a department chair.

What do you enjoy about teaching? The most unique aspect of teaching is the interaction with students that comes with many possible opportunities to influence the way they think and the

way they affect how I view the world.

Later this year, you'll be moving into the new Iribe Center. What are you most excited about? There are so many amazing features in the new Iribe Center. The glass building maximizes the amount of sunlight, especially in the student offices and classrooms. Its roof-top garden, a vision by our generous alum, Brendan Iribe, is unheard of in an academic setting. It will offer an inviting place to relax, to think, and to imagine. Last but not the least, the Iribe Center offers beautiful classrooms, an auditorium, and research labs in which to teach, learn, work, and experiment.

You came to Maryland as chair of the Computer Science Department, one of the university's fastest-growing programs. What's one thing you hope to accomplish in your first year? In my view, there are three top priorities for the department. First, to have more controlled and selective growth—as well as a more diverse student population—in the CS majors. Second, to improve the quality of education and experiences for students by hiring more world-class faculty and tracks with the growth of CS majors, while also offering more inclusive learning environments and richer academic programs. Third, I'd like to see the breadth and depth of research by faculty and students expand, with increased relevance to society. We have, to a degree, taken some important steps on the first goal via the newly approved Limited Enrollment Program. We have been working on the second, which will have direct impact on the third as well.

As someone very connected to tech, what's a piece of convenience technology that you cannot live without? The iPhone. It enables us to connect with others via so many different means, provides us information at our fingertips, informs us of where we are and where we are heading, and entertains us - if we ever find spare time.

Article by Maggie Haslam

Special Feature

New Campus Resource

The Office of the Provost and the Teaching Facilities Committee have recently announced the launch of an exciting new campus resource: [CLASSROOMS.UMD.EDU](https://classrooms.umd.edu).

On this site you can:

✓ Find Classroom Information:

Including photos, equipment listing, and schedules

✓ Get Help:

Classroom Support, TLTC, Academic Technology & Innovation

✓ Explore Classroom Technology:

User Guides, Clicker Channels, User Support

✓ TERP Classrooms:

Descriptions, TERP Active-Learning Classroom Inventory, Teaching Resources

✓ Request Classroom Improvements:

A tool to allow you to submit requests to add capabilities to an existing classroom space (*maintenance requests, broken furniture, leaks, etc. should be reported to Classroom Support at 301-405-2500 or classrooms@umd.edu*)

✓ See Classroom Projects & Initiatives:

User Survey Results, Annual Reports, and more.

Recognition & Awards

PTK Excellence Awards

SUBMIT A NOMINATION! The nomination period for the **PTK Excellence Awards** is now open. We encourage nominations for non-tenure track faculty who have been appointed as full time faculty at UMD for at least five years. Submit a nomination via the [online entry form](#).

PROFESSIONAL TRACK FACULTY EXCELLENCE AWARDS

To Do..

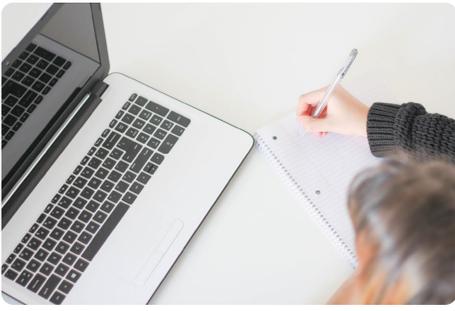
**Nominate a PTK faculty member for the 2018-19 Award!*

- Nomination window for each academic year is **January 15-February 15**
- Nomination materials due by **February 28**
- The award includes a \$1,000 stipend and recognition from the Provost.

Faculty Development

Spring Writing Groups

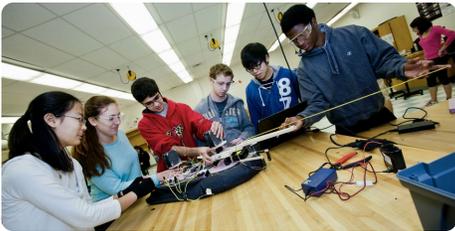
Get your productivity flowing by joining a focused writing group or workshop group, where members workshop their work in progress. Groups typically consist of 3-7 colleagues who meet on



a regular basis to discuss tips and resources for maintaining a schedule and advancing scholarly goals. [Click here](#) to get started.

Faculty members -- we want to hear from you!

Take our [brief survey](#) to let us know what types of programs you want to see us offer in Fall 2019 and beyond. Your input is valuable to our future initiatives. Responses are anonymous and results will be shared in the February newsletter.



Love the One You're With: Creating a Classroom Community

It's the first day of class. They shuffle in, spot similar life-forms, and slip in with that group. Hipsters, serious young scholars, middle-aged moms and dads. One or two sad souls choose spots isolated from the others...Every good teacher knows that learning doesn't happen in isolation. Creating a learning community gives students...[Read more.](#)

City of College Park News

Make your new home in College Park

Looking to move closer to UMD? Howard Lane, a recently developed pocket area in the Old Town College Park neighborhood, has a few remaining lots for sale within 3 blocks of the university. [Read more.](#)



Workshops & Events

Feb. 11 [APT Workshop: Pre-3rd Year Review Assistant Professors](#)

Feb. 13 [APT Workshop: APT Committee Chairs, Committee Members; Department Chairs & Directors; APT Process Administrators](#)

Feb. 15	APT Workshop: Post-3rd Year Review Assistant Professors
Feb. 18	APT Workshop: Associate Professors
Feb. 18	PTK Workshop: Promotions and Mentoring
Feb. 19	PTK Workshop: Promotions and Mentoring
Feb. 19	New Faculty Orientation Follow Up Lunch: Diversity & Campus Climate
Feb. 20	Chair Workshop: What Chairs Need to Know About Security & Conflicts of Interest*
Feb. 25	Faculty Forum: Immigration
Feb. 26	Insights Into the Dynamics of Aging: Current Research at UMD
Feb. 28	APT Workshop: Dossier Preparation
Mar. 4	APT Workshop: APT Q&A
Mar. 4	PTK Workshop: Promotions and Mentoring
Mar. 5	PTK Workshop: Promotions and Mentoring
Mar. 5	Chair Workshop: Ability and Disability*
Mar. 13	Faculty Forum: Freedom of Information Act*
Mar. 26	Faculty Forum: Working with Graduate Students*
Apr. 9	Faculty Forum: Academic Freedom & Free Speech*
Apr. 16	Chair Workshop: Research Integrity*

*Registration opens soon.

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