Lydia E. Kavraki

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EDUCATION

Ph.D. in Computer Science, Stanford University, 1995
M.S. in Computer Science, Stanford University, 1992
B.A. in Computer Science, University of Crete, Greece, 1989

PROFESSIONAL EXPERIENCE

2025-present	University Professor, Rice University
2024-present	Kenneth and Audrey Kennedy Professor of Computing and Professor of Computer Science. Joint appointments with Bioengineering (since 2004), Electrical and Computer Engineering (since 2017) and Mechanical Engineering (since 2017), Rice University
2020-present	Director, Ken Kennedy Institute, Rice University
2024-present	Baker Institute Rice Faculty Scholar, Baker Institute Science and Technology Policy Program, Baker Institute for Public Policy, Rice University
2015-present	Program Director and Principal Investigator, National Library of Medicine Biomedical Informatics Training Grant, Rice University and the Keck Center of the Gulf Coast Consortia for Quantitative Biomedical Sciences (KECK GCC), Houston, TX
2004-2024	Noah Harding Professor, Department of Computer Science. Joint appointments with Bioengineering (since 2004), Electrical and Computer Engineering (since 2017) and Mechanical Engineering (since 2017), Rice University
2016-2019	Chair, Executive Committee, KECK GCC, Houston, TX
2006-2019	Rice University Institutional Training Director, KECK GCC, Houston, TX
2001-2004	Associate Professor, Departments of Computer Science and Bioengineering, Rice University
1996-2001	Assistant Professor, Department of Computer Science, Rice University
1999-2001	Assistant Professor, Department of Bioengineering, Rice University (Joint Appointment)
1998 (Summer)	Visiting Assistant Professor, Department of Computer Science, Stanford University
1997 (Summer)	Visiting Assistant Professor, Department of Computer Science, Stanford University
1995-1996	Research Associate, Robotics Laboratory, Stanford University
1995	Postdoctoral Researcher, Robotics Laboratory, Stanford University
1990-1994	Research Assistant, Stanford University
1987-1989	Software Engineer, Foundation of Research and Technology, Greece

AWARDS AND HONORS

- Elected to the European Academy of Sciences, 2025
- Elected to the National Academy of Sciences, 2025
- Elected to the National Academy of Engineering, 2025
- Elected to the American Academy of Arts and Sciences, 2023
- IEEE Frances E. Allen Medal, IEEE, 2023
- Faculty Award for Excellence in Research, Teaching and Service, Rice University, 2022
- Elected to Academia Europaea, 2020
- ACM-AAAI Allen Newell Award, 2020
- Pioneer Award, IEEE Robotics and Automation Society, 2020
- Outstanding Faculty Research Award, Engineering School, Rice University, 2020
- World's 50 Most Renowned Women in Robotics by Analytics Insight, 2020
- Elected to the International Academy of Medical and Biological Engineering (IAMBE), 2020
- Elected to the Academy of Athens, 2018

- Association for Computing Machinery (ACM) Athena Lecturer Award, 2017-2018
- Presidential Mentorship Award, Rice University, 2016
- Anita Borg ABIE Technical Leadership Award, 2015
- Honorary Member, Artificial Intelligence Society of Greece, 2014
- Elected to the National Academy of Medicine (NAM), 2012
- Member, The Academy of Medicine, Engineering and Science of Texas (TAMEST), 2012
- Fellow, American Association for the Advancement of Science (AAAS), 2012
- Fellow, Institute of Electrical and Electronics Engineers (IEEE), 2012
- BioHouston's 2012 Women in Science Award, 2012
- World Open Source Software Challenge Grand Prize, OMPL (Open Motion Planning Library), 2012
- Fellow, ACM, 2010
- Fellow, Association for the Advancement of Artificial Intelligence (AAAI), 2008
- Fellow, American Institute for Medical and Biological Engineering (AIMBE), 2004
- Fellow, The World Technology Network (WTN), 2004
- Charles Duncan Award for Outstanding Academic Achievement, Rice University, 2004
- 100 World's Top Young Innovators by MIT's Technology Review Magazine, 2002
- IEEE Robotics and Automation Society Early Academic Career Award, 2002
- Brilliant 10 Scientists, Popular Science Magazine, 2002
- Whitaker Investigator, 2001
- Fellow, Sloan Foundation, 2000
- ACM Grace Murray Hopper Award, 2000
- NSF CAREER Award (Early Development Career Award), 1997-2002
- Rockwell Foundation Fellowship, 1994
- GTE Fellowship, 1993
- Stanford University Fellowship, 1989, 1990
- Four Annual Scholarships (1985-1989) from the Greek Scholarship Fund
- Award for 1st place among graduates of the Computer Science Department, University of Crete, Greece, 1989

PROFESSIONAL SERVICE

NATIONAL ACADEMIES (partial list)

- Chair, Interest Group (IG) on Education of the Health Care & Science Workforce, May 2024-present
- Workshop Organizer, AI for the Health Care Workforce, Annual Meeting of the NAM, October 2024
- Co-chair, Annual Meeting of the Texas Academy of Science, Medicine and Engineering, May 2023
- Member, National Academies of Sciences, Engineering, and Medicine (NASEM) Committee for Workshops on "Engaging Scientists to Prevent Harmful Exploitation of Advanced Data Analytics and Biological Data,", 2022-2024
- Member, Board on Mathematical Sciences and Analytics of the National Academies (BMSA) of the National Academies, 2019-present
- Reviewer, Illustrations for Mathematics Project, 2019-present
- Member, National Academy of Medicine (NAM) Committee on Emerging Science, Technology, and Innovation in Health and Medicine (CESTI), 2019-2022
- Founding Chair and Current Chair of the the Interest Group (IG) on Health and Technology of the NAM, 2018-2022; Organized
- Workshop Organizer, Human Health and Equity in an Age of Robotics and Intelligent Machines, Annual Meeting of the NAM, October 2021
- Workshop Organizer, Telemedicine and Telehealth: Accelerated Change in the Era of the Pandemic, Annual Meeting of the NAM, October 2020
- Reviewer, Illustrating the Impact of the Mathematical Sciences, Board on Mathematical Sciences and Analytics of the National Academies of Sciences, Engineering, and Medicine, 2020-2021
- Member, Selection Committee for the first phase of the Competition of the Healthy Longevity Catalyst Awards, 2020-2021

- Chair of Section 1, National Academy of Medicine, 2017-2019
- Vice-Chair of Section 1, National Academy of Medicine, 2015-2017
- Invited Participant, Workshop on Key Challenges in the Implementation of Convergence, Workshop of the National Academy of Sciences, Washington, DC, September 16-17, 2013

EDITORIAL POSITIONS (partial list)

- Board of Reviewing Editors, PNAS-Nexus, NAS, 2023-present
- Science Robotics, Science Journals, 2023-present
- Senior Associate Editor, Annual Reviews for Robotics, Control, and Autonomous Systems, Annual Reviews, 2021-present (Editorial Committee Member 2015-2020)
- Editorial Board, Springer Tracts in Advanced Robotics (STAR), Springer - Verlag, March 2002-present
- Associate Editor, The International Journal of Robotics Research, Sage Press, September 2009-2022. Member of the Executive Steering Committee 2015-2022. Senior Advisor, 2023-present
- Associate Editor, Frontiers in Molecular Biosciences, Frontiers, 2014-present

EXTERNAL ADVISORY BOARDS/ REVIEW AND SELECTION COMMITTEES (partial list)

- MD Anderson Cancer Center, Institute for Data Science in Oncology, Chair of the Board, 2023-present
- External Advisory Board, MD Anderson Cancer Center, Houston, TX, 2015-present
- External Advisory Board, Department of Computer Science, University of Crete, Greece, 2025-present
- Awards Selection Committee for Young Scientists, Bodosaki Foundation, 2025-present
- Technical
- Awards Nomination Committee, IEEE Robotics and Automation Society, 2024-present
- External Advisory Board, Molecule Maker Lab Institute (MMLI), NSF AI Institute, UIUC, 2024-present
- External Advisory Committee, Center for Innovation, Technology, and Aging (CITA) at the University of South Florida (USF), 2024-present
- Scientific Experts Panel, Computational Science & Technology Research Center (CaSToRC) at the Cyprus Institute (CyI), Cyprus, 2024-present
- Review Committee, Research Center ATHENA, Greece, 2025
- Sectoral Scientific Council on Artificial Intelligence, National Council for Research, Technology, and Innovation, Hellas, 2024-present
- Scientific Advisory Committee, Hellenic Center of Excellence in Robotics (HERON), 2023-present
- External Review Committee, Institute of Computer Science, Foundation of Research and Technology Hellas (FORTH), 2022
- Academic Council, Halliburton Labs, 2022-2024
- External Review Committee, Department of Computer Science, University of Sydney, Australia, 2022
- External Review Committee, Robotics Center, QUT University, Australia, 2023
- External Advisory Board, T32 Training Program in Biostatistics for Cancer Research, Rice University, 2022-present
- External Advisory Board, AI Institute for Learning-Enabled Optimization at Scale (TILOS), UCSD, 2022-present
- External Advisory Committee, Center for Autonomous Systems and Technologies (CAST) Caltech, 2020-2022
- International Scientific Advisory Committee, Hellenic Robotics Institute (HERON), 2022-present
- National Center for Scientific Research, Scientific Council, Athens, Greece, 2019-present
- NSERC National Canadian Robotics Network, 2018-2023
- National Ministry of Education, Scientific Council for Mathematics and Information Science, Athens, Greece, 2018-present
- Robotics and Autonomous Systems Center, University of Delaware, 2020-present
- External Review Committee, Department of Electrical and Computer Engineering at the University of Illinois at Urbana Champaign, 2015-2018
- External Advisory Committee, Department of Computer Science and Engineering, Washington University at San Louis, 2007-2020

- External Advisory Committee, Department of Biomedical Informatics (DBMI), University of Pittsburgh School of Medicine, 2016-2018
- School of Informatics, Computing, and Computer Systems, Northern Arizona University, 2015-2018
- Hellenic Quality Assurance Agency, External Evaluation Committee for Greek Universities, 2010-2014
- Max Planck Institute, Germany, 2008

SCIENTIFIC ADVISORY BOARDS AND COMMITTEES (partial list)

- Distinguished Lecturer, IEEE Robotics and Automation Society, 2025-2027
- Program Director and PI, National Library of Medicine (NLM) Biomedical Informatics Training Program (T15), Keck Center of the Gulf Coast Consortia for Interdisciplinary Biosciences Training, 2015-present
- Selection Committee, IEEE Frances E. Allen Medal, 2024-present
- Elected Member, IEEE Robotics and Automation Society Adcom, 2023-present. Member of the Financial Board and the Long-Range Planning Committee
- Steering Committee, IEEE Robotics and Automation Society (RAS) Women in Engineering (WiE) and IDEA Initiative, 2021-present
- IEEE Computer Science Fellows Evaluation Committee, 2020-present
- Awards Selection Committee, Foundation of Research and Technology - Hellas (FORTH) Synergy Grants, 2019-present

PUBLICATIONS

Books

[1] H. Choset, W. Burgard, S. Hutchinson, G. Kantor, L. E. Kavraki, K. Lynch, and S. Thrun, *Principles of Robot Motion: Theory, Algorithms, and Implementation.* MIT Press, June 2005.

[2] P. K. Agrawal, L. E. Kavraki, and M. Mason, *Robotics: The Algorithmic Perspective.* Natick MA: AK Peters, 1998.

Archival Papers

Over 150 Journal Papers, over 20 Book chapters, over 170 conference papers, and a large number of abstracts.
H-index = 86 (Google Scholar) Scholar page: https://scholar.google.com/citations?user=Q6pxNZYAAAAJhl=en

SUPPORTED SOFTWARE DISTRIBUTION and WEB SERVERS

Robotics Projects

1. OMPL `http://ompl.kavrakilab.org`
   The Open Motion Planning Library (OMPL) consists of many state-of-the-art sampling-based motion planning algorithms. OMPL.app, the front-end for OMPL, contains a lightweight wrapper for the library and a simple GUI. OMPL can be used separately or as part of the ROS operating system. OMPL has an active community of users and is also been used for educational purposes. OMPL was awarded the Grand Prize at the World Open Source Software Challenge in 2012. It has more than 3,000 active users.

2. Planner Arena `http://plannerarena.org/`
   Planner Arena is a site for benchmarking sampling-based planners. The site is set up to show the performance of implementations of various sampling-based planning algorithms in the Open Motion Planning Library (OMPL).

Bioinformatics/Biomedical Projects

1. PROTEAN-CR `https://proteancr.kavrakilab.rice.edu/`
   A proteomics toolkit that integrates structural modeling and analysis in cancer research. PROTEAN-CR supports structural analysis of cancer-related proteins and structural analysis and modeling of T-cell mediated immunity.

2. APE-Gen `https://github.com/KavrakiLab/APE-Gen`
   APE-Gen is a fast method for generating ensembles of bound pMHC conformations. It generates an ensemble of bound conformations by iterated rounds of anchoring the ends of a given peptide near known pockets in the binding site of the MHC, sampling peptide backbone conformations with loop modeling, and then performing energy minimization to fix steric clashes, accumulating conformations at each round.

GRANTS

Information available upon request. Over $19,000,000 in research grants with Kavraki as the PI; over $20,000,000 in research grants with Kavraki as a Co-PI; over $5,000,000 in training grants with Kavraki as PI; and over $12,000,000 in training and equipment grants with Kavraki as participating faculty or Co-I. Funding sources: NSF, NIH, CPRIT, ONR, DOD, Whitaker, NASA, and industry.

ACADEMIC ADVISING

Over 20 postdoctoral students, over 30 PhD students, several MS students and mentoring of many (> 100) undergraduates.

INVITED TALKS AT CONFERENCES AND UNIVERSITIES (partial list)

259 invited presentations at conferences, academic departments, and other public meetings. Several plenary talks (ICRA, IROS, and others). This list does not include paper presentations.