TAKASHI NISHIKAWA

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LinkedIn: www.linkedin.com/in/takashinishikawa (hyperlink)
Data Science Portfolio: github.com/tnishi0/portfolio (hyperlink)
US permanent resident (green card holder)

OBJECTIVE

I am looking for opportunities in industry because I have become more and more fascinated by the power of mathematics, data, and computation to make an impact on diverse practical applications. After years of academic research, now I really want to use my expertise in mathematical science—leveraging data, understanding networks, and applying optimization techniques—to more directly benefit businesses, people, and the society.

SKILLS & ABILITIES

- **Technical Knowledge & Expertise:** Data visualization and analytics, machine learning, mathematics and statistics, networks/graphs, power systems, metabolic networks, neuronal networks, nonlinear dynamics and control of complex systems
- **Programming Languages & Tools:** Python/numpy/pandas/matplotlib/scikit-learn (intermediate), C/C++ (intermediate), Linux/Unix shell scripting (intermediate), MATLAB (expert; familiar with Optimization, Statistics, Curve Fitting, and Parallel Computing Toolboxes)
- **Languages:** Fluent in both English (25 years in the U.S.) and Japanese (native)

PROFESSIONAL EXPERIENCE

Various university faculty and researcher positions 2001 – 2022

Northwestern Univ. / Clarkson Univ. / Southern Methodist Univ. / Arizona State Univ.

- Developed computational model of cellular metabolic networks, mathematically and numerically analyzing the reaction silencing phenomenon and explaining it as a fundamental consequence of cellular growth maximization. Published results in 2 journal articles.
- Developed network clustering algorithm (visual analytics software published; URL); analyzed stability and capacity of oscillatory associative memory neural networks. Published results in 3 journal articles.
- Directed 6 postdoctoral researchers and coordinated with 4 external industrial/governmental partner institutions for successful completion of 3-year, $3.2M project. Developed and lab/field-tested a hierarchical control architecture for power grids with increased renewable generation.

EDUCATION

University of Maryland – College Park, MD – Ph.D. (Applied Mathematics)
University of Tokyo – Tokyo, Japan – BS (Pure and Applied Sciences)

COMMUNICATION

- Delivered 69 talks (35 invited) at national and international conferences.
- Published 48 articles in peer-reviewed journals/conferences with 4000+ citations [Google Scholar (URL)]
- Produced 3 YouTube videos to disseminate research. URLs: #1, #2, #3
- Delivered Science Café talk to the general public (Potsdam, NY) and Jr. Science Café lesson to group of middle school students (Museum of Science and Industry, Chicago, IL).

LEADERSHIP

- Supervised 8 postdoctoral researchers, 6 grad students, and 4 undergrad students in research projects.
- Organized 10 conference sessions and served on organizing committees for 4 conferences.
- Served editorial roles for 3 scientific journals and 1 web magazine for the research community.