Tri-An D. Nguyen

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Research Interests

My research interests lie at the intersection of AI and economics. I have been working on opponent modeling, automated negotiation, and language-model persuasion.

Education

Rutgers University, New Brunswick – Honors College
B.S. in Computer Science and B.S. in Mathematics, GPA: 3.95/4.0 Expected May 2027

- Thesis: *Scalable Opponent Strategy Estimation in Imperfect-Information Games*
- Advisor: Xintong Wang

Selected Honors and Awards

Computing Research Association

- Honorable Mention, Outstanding Undergraduate Research Award, 2026

Automated Negotiating Agents Competition (ANAC)

- 1st place, Automated Negotiation League (ANL), 2025 | Certificate

Rutgers University

- Paul Robeson Scholar, 2026
- Dean's Scholarship, 2023 – 2027
- School of Arts and Sciences Excellence Award, 2023 – 2025

Papers and Technical Reports

Scalable Opponent Strategy Estimation in Imperfect-Information Games
T. D. Nguyen, G. Seo, X. Wang
Under review at the ACM Web Conference (**TheWebConf 2027**) | Paper

SPAR: Search-trained Push Action Ranker for Efficient Navigation Among Movable Obstacles
D. M. Ramesh, **T. D. Nguyen**, J. Huang, J. Yu, K. Bekris, A. Boularias
Under review at the International Conference on Robotics and Automation (**ICRA 2027**) | Paper

RUFL: Rutgers Utility Fit Lookahead, 1st place in ANAC 2025 – ANL
G. Seo, **T. D. Nguyen**, X. Wang
Poster presented at the International Joint Conference on Artificial Intelligence (**IJCAI 2025**)
Report | Slides | Video presentation

Research Experience

Scalable Opponent Strategy Estimation in Imperfect-Information Games
Lead researcher | Advisor: X. Wang | Rutgers
Project to efficiently estimate an opponent's strategy; paper under review at **TheWebConf 2027**

- Developed two opponent-modeling algorithms: SLME, which models the opponent as a mixture of known strategies, and OISR, which reconstructs the opponent's strategy directly
- Proved that the time and space complexities of SLME and OISR scale with the number of observations and potentially visited game states, not the full game-tree size
- Proved that best responses to SLME and OISR models achieve vanishing regret under sufficient exploration (for SLME, when the opponent is a mixture of the known strategies)
- Empirically evaluated SLME and OISR on Leduc poker and Deal or No Deal

RUFL: Rutgers Utility Fit Lookahead
Research collaborator | Advisor: X. Wang | Rutgers
Project to develop an agent for ANAC 2025 – ANL that maximizes utility across interdependent negotiations; 1st place among 42 international teams; poster presented at **IJCAI 2025**

- Co-developed a condensed game-tree search over sequential deals using heuristic utility estimates and early termination
- Estimated the opponent's concession rate from their offers over time to maximize payoff

Learning to Sell: Persuasion is Learnable by LLM Agents
Lead researcher | Advisor: M. Horta Ribeiro | Princeton
Project to study how LLMs can learn persuasion in an e-commerce setting

- Built an RL framework to train an LLM seller to persuade an LLM buyer to choose a sponsored book over three other options
- Fine-tuned 4B–9B open-weight sellers, raising the sponsored-book selection rate from 53% to 93% on average across five buyer models, versus 81% for frontier models (GPT 6.1 Sol, Claude Opus 5.5, DeepSeek V4 Pro)
- Conducting a human study to assess whether the trained sellers can persuade human buyers
- Preparing a paper for submission to **ACL 2027** in January 2027

SPAR: Search-trained Push Action Ranker for Efficient Navigation Among Movable Obstacles
Research collaborator | Advisor: A. Boularias | Rutgers
Project to develop a model that learns which obstacles a robot should push, and where, to travel to a destination; paper under review at **ICRA 2027**

- Formulated the task as planning sequences of physically feasible pushes
- Reduced planning time 3.8× in simulation compared with random search
- Improved the success rate in real-robot trials from 68% with random search to 93%

INDUSTRY EXPERIENCE

Amazon Web Services – Systems Manager
Software Development Engineer Intern Summer 2025

- Designed and built an end-to-end pipeline that automatically provisions hundreds of OpenSearch clusters, saving dozens of developer hours per deployment
- Diagnosed a bug in the OpenSearch codebase and coordinated a cross-team fix

Horizon Blue Cross Blue Shield – Enterprise Business & Technology Solutions
Applications Developer Intern Summer 2024

- Enhanced a platform for tracking the software development life cycle, mapping dozens of legacy project record types to Elasticsearch
- Resolved an issue in the testing infrastructure affecting 40+ unit tests

Rutgers Office of Information Technology – Enterprise Application Services
Student Software Developer Oct 2023 – Dec 2024

- Developed a full-stack Django application to manage dozens of project requests

SERVICE

Rutgers University, Department of Computer Science
Teaching Assistant, Introduction to Artificial Intelligence Expected Spring 2027

DormStacks – Community Poker and Education Platform
Founder and Lead Developer Dec 2025 – Present

- Developed a free platform where people can form communities to play poker, study poker theory, and evaluate poker bots
- Integrated hand replay and automated feedback for strategy analysis

Rutgers Undergraduate Student Alliance of Computer Scientists
Outreach/Education Chair Jun 2025 – Present

- Connected 400+ students with industry, faculty, and alumni through talks, networking events, and tours

Road to SWE Mentor Sep 2025 – Present

- Mentoring students through software projects and internship recruiting
- Mentees secured internships at IBM and Morgan Stanley

Private and Volunteer Tutoring May 2023 – May 2025

- Tutored students in precalculus, calculus, and linear algebra