Thuy-Ngoc (Ngoc) Nguyen

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RESEARCH INTERESTS

Human-AI interaction and collaboration, human computation and user modeling, recommender systems, artificial intelligence, machine learning, and cognitive and behavioral science.

EDUCATION

2015 – 2019	**Free University of Bozen-Bolzano, Italy**
	Ph.D. in Computer Science (graduated with excellence)
2011 – 2013	**Vietnam National University – HoChiMinh City University of Science, Vietnam**
	M.S. in Information Systems (graduated with excellence)
2006 – 2010	**HoChiMinh City University of Education, Vietnam**
	B.S. in Computer Science Education (graduated with distinction)

PROFESSIONAL APPOINTMENTS

08/2023 – present	**Assistant Professor**
	Department of Computer Science, University of Dayton, OH, USA
01/2023 –07/2023	**Visiting Faculty Lecturer**
	Miner School of Computer and Information Sciences, UMass Lowell, MA, USA
10/2019 – 12/2022	**Postdoctoral Researcher**
	Dynamic Decision-Making Lab, Carnegie Mellon University, PA, USA
2018 – 2019	**Research Assistant**
	Faculty of Computer Science, Free University of Bozen-Bolzano, Italy
02-03/ 2018	**Visiting Ph.D. student**
	Insight Centre for Data Analytics, University College Cork, Ireland
2010-2015	**Lecturer**
	Faculty of Information Technology, HCM City University of Education, Vietnam

GRANTS, AWARDS, AND HONORS

07/2025	**NSF CRII** ($174,592, PI)
04/2025	**NSF STTR Phase I Award** ($100K, Co-PI)
2024	**Research Council Seed Grant (competitive internal research grant)**
	University of Dayton ($6.5K, PI)

2023 **UD/UDRI Research Fellowship Program**
University of Dayton Research Institute and University of Dayton ($17.8K, PI)

2023 **Research Council Seed Grant (competitive internal research grant)**
University of Dayton ($6.5K, PI)

2020 **Best PhD Student Award Nomination**
Faculty of Computer Science, University of Bozen-Bolzano, Italy

2016 – 2017 **Student Travel Award,** ACM UMAP Conference

2015 – 2018 **PhD Scholarship**, University of Bozen-Bolzano, Italy

2013 **NAFOSTED Fellowship for Young Researchers**
Vietnam National Foundation for Science and Technology Development (VN NAFOSTED)

2010 **Best Undergraduate Research Award in STEM**
HoChiMinh City University of Education, Vietnam

SELECTED PUBLICATIONS (in reverse chronological order)

JOURNAL ARTICLES

[1] Phan, D. N., Hytla, P., Rice, A., & **Nguyen, T. N.** (2025). Federated learning with randomized alternating direction method of multipliers and application in training neural networks. *Neural Networks*, 107501.

[2] **Nguyen, T. N.**, Phan, D. N., & Gonzalez, C. (2023). Learning in Cooperative Multiagent Systems Using Cognitive and Machine Models. *ACM Transactions on Autonomous & Adaptive Systems*, 1-22.

[3] **Nguyen, T. N.** & Gonzalez, C. (2023). Minimap: An interactive dynamic decision-making game for search and rescue missions. *Behavior Research Methods*. https://doi.org/10.3758/s13428-023-02149-7

[4] Gupta, P., **Nguyen, T. N.**, Gonzalez, C., & Woolley, A. W. (2023). Fostering Collective Intelligence in Human–AI Collaboration: Laying the Groundwork for COHUMAIN. *Topics in Cognitive Science*.

[5] **Nguyen, T. N.**, Phan, D. N., & Gonzalez, C. (2022). SpeedyIBL: A comprehensive, precise, and fast implementation of instance-based learning theory. *Behavior Research Methods*, 1-24.

[6] Zhao, M., Eadeh, F., **Nguyen, T. N.**, Gupta, P., Gonzalez, C., Admoni, H., and Woolley, A. W. (2022). Teaching Agents to Understand Teamwork: Evaluating and Predicting Collective Intelligence as a Latent Variable via Hidden Markov Model. *Computers in Human Behavior*, 139, 107524.

[7] **Nguyen, T. N.,** & Gonzalez, C. (2021). Theory of Mind from Observation in Cognitive Models and Humans. *Topics in Cognitive Science*.

[8] Phan, D. N., & **Nguyen, T. N.** (2021). An accelerated IRNN-Iteratively Reweighted Nuclear Norm algorithm for nonconvex nonsmooth low-rank minimization problems. *Journal of Computational and Applied Mathematics*, 396, 113602.

[9] **Nguyen, T. N.,** Ricci, F., Delic, A., & Bridge, D. (2019). Conflict resolution in group decision making: insights from a simulation study. *User Modeling and User-Adapted Interaction*, *29*(5), 895-941.

[10] **Nguyen, T. N.,** & Ricci, F. (2018). A chat-based group recommender system for tourism. *Information Technology & Tourism*, 18(1-4), 5-28.

[11] Delic, A., Neidhardt, J., **Nguyen, T. N.**, & Ricci, F. (2018). An observational user study for group recommender systems in the tourism domain. *Information Technology & Tourism*, 19(1-4), 87-116.

CONFERENCE PAPERS

[12] **Nguyen, T. N.**, Jamale, K., & Gonzalez, C. (2024). Predicting and Understanding Human Action Decisions: Insights from Large Language Models and Cognitive Instance-Based Learning. *Proceedings of the AAAI Conference on Human Computation and Crowdsourcing* (Vol. 12, pp. 126-136).

[13] **Nguyen, T. N.**, McDonald, C., & Gonzalez, C. (2024). Credit Assignment: Challenges and Opportunities in Developing Human-like Learning Agents. *Proceedings of the AAAI 2024 Spring Symposium Series* Vol. 3(1), 54-57.

[14] McDonald, C., Malloy, T., **Nguyen, T. N.**, & Gonzalez, C. (2023). Exploring the path from instructions to rewards with large language models in instance-based learning. In *Proceedings of the AAAI Symposium Series* (Vol. 2, No. 1, pp. 334-339).

[15] Eadeh, F., Zhao, M., **Nguyen, T. N.**, Gupta, P., Gonzalez, C., Admoni, H., & Woolley, A. W. (2022). Good for me, but bad for we: How anger can motivate individual performance but inhibit teamwork. *ACM Collective Intelligence Conference*, October 20-21. Virtual meeting.

[16] Gulati, A., **Nguyen, T. N.**, & Gonzalez, C. (2021). Task complexity and performance in individuals and groups without communication. *AAAI Fall Symposium on Theory of Mind for Teams*.

[17] McDonald, C., **Nguyen, T. N.**, & Gonzalez, C. (2021). Multi-Agent Specialization and Coordination in a Gridworld Task. *AAAI Fall Symposium on Theory of Mind for Teams*.

[18] **Nguyen, T. N.,** Phan, D. N., & Gonzalez, C. (2021) A Cognitive Hysteretic-IBL Model for Coordinated Multi-Agent Transportation Problems. *ACM Collective Intelligence Conference*, June 29-June30. Virtual meeting.

[19] Eadeh, F., Zhao, M., **Nguyen, T. N.**, Gupta, P., Gonzalez, C., Admoni, H., and Woolley, A. W. (2021). Anger: Helpful or Harmful for Team Performance? *ACM Collective Intelligence Conference*, June 29-June30. Virtual meeting.

[20] **Nguyen, T. N.**, & Gonzalez, C. (2020). Cognitive Machine Theory of Mind. In Proceedings of the 42nd Annual Meeting of the Cognitive Science Society (*CogSci* 2020). *42nd Annual Meeting of the Cognitive Science Society (CogSci 2020)*, July 29-August 1, Virtual meeting. (pp. 2560-2566).

[21] **Nguyen, T. N.**, & Gonzalez, C. (2020). Effects of Decision Complexity in Goal seeking Gridworlds: A Comparison of Instance Based Learning and Reinforcement Learning Agents. *18th Annual Meeting of the International Conference on Cognitive Modelling*. July 20-July 31, Virtual meeting.

[22] **Nguyen, T. N.**, & Ricci, F. (2018). Situation-dependent combination of long-term and session-based preferences in group recommendations: an experimental analysis. In *Proceedings of the 33rd Annual ACM Symposium on Applied Computing* (pp. 1366-1373).

[23] **Nguyen, T. N.**, & Ricci, F. (2017). Dynamic elicitation of user preferences in a chat-based group recommender system. In *Proceedings of the 32nd Symposium on Applied Computing* (pp. 1685-1692).

[24] **Nguyen, T. N.**, & Ricci, F. (2017). Combining long-term and discussion-generated preferences in group recommendations. In *Proceedings of the 25th Conference on User Modeling, Adaptation and Personalization* (*UMAP* 2017) (pp. 377-378).

[25] **Nguyen, T. N.**, & Ricci, F. (2017). A chat-based group recommender system for tourism. In *Information and Communication Technologies in Tourism 2017* (pp. 17-30). Springer.

[26] **Nguyen, T. N.** (2017). Conversational group recommender systems. In *Proceedings of the 25th Conference on User Modeling, Adaptation and Personalization* (*UMAP* 2017) (pp. 331-334).

[27] Delic, A., Neidhardt, J., **Nguyen, T. N.**, Ricci, F., Rook, L., Werthner, H., & Zanker, M. (2016). Observing group decision making processes. In *Proceedings of the 10th ACM conference on recommender systems* (pp. 147-150).

WORKSHOP PAPERS, POSTERS, AND DEMO PAPERS

[28] Delic, A., Emamgholizadeh, H., **Nguyen, T. N.**, & Ricci, F. (2024). CHARM: a Group Decision Making Support Chatbot. In Companion Proceedings of the 29th International Conference on Intelligent User Interfaces (pp. 7-10).

[29] **Nguyen, T. N.**, & Ricci, F. (2017). Preference elicitation for group recommender systems. Italian Information Retrieval Workshop. June 05-07.

[30] Delic, A., Neidhardt, J., **Nguyen, T. N.**, & Ricci, F. (2016). Research Methods for Group Recommender System. *Workshop on Recommenders in Tourism*.

[31] **Nguyen, T. N.**, & Ricci, F. (2016). Supporting group decision making with recommendations and explanations. *ACM Conference on User Modeling, Adaptation and Personalization* (in conjunction with *UMAP* 2016).

BOOK CHAPTERS

[32] **Nguyen, T. N.**, McDonald, C., & Gonzalez, C. (2025). Credit assignment: challenges and opportunities in developing human-like learning agents. *Bi-directionality in Human-AI Collaborative Systems*, 407-449.

[33] Delic, A., **Nguyen, T. N.**, & Tkalcic, M. (2020). Group Decision-Making and Designing Group Recommender Systems. *Handbook of e-Tourism*, 1-23.

TEACHING EXPERIENCE

Instructor, *University of Dayton, OH, USA*

- CPS 499/592 Human-AI Interaction — Spring 2025
- CPS 480/580 Artificial Intelligence — Fall 2023, Fall 2024
- CPS 350 Data Structures and Algorithms — Spring 2024
- CPS 349 Data Science — Spring 2024, Fall 2024

Instructor, *University of Massachusetts Lowell, MA, USA*

- Computing I — Spring 2023

Lecturer, *HCM City University of Education, Vietnam*

- Introduction to Databases — 2011-2015
- Database Management Systems — 2011-2015
- System Analysis and Design — 2011-2015
- Business Intelligence Systems — 2014

Teaching Assistant, *Carnegie Mellon University, PA, USA*

- Decision Models and Games — Spring 2022
- Dynamic Decisions — Spring 2020, Spring 2021

Volunteer Tutor, *Free University of Bozen-Bolzano, Italy*

- Web Development with Meteor JS — Summer 2016

ACADEMIC ACTIVITIES

WORKSHOP CO-ORGANIZER

- AAAI 2021 Fall Symposium on Computational Theory of Mind for Human-Machine Teams
- ENTER 2017 e-Tourism Workshop on Decision Making in Tourism, Rome, Italy

EDITORIAL BOARD MEMBER

- Springer Journal of Information Technology & Tourism

PROGRAM COMMITTEE

- ACM Conference on Recommender Systems (RecSys from 2018 to present)
- ACM Conference on User Modelling, Adaptation and Personalization (2018-2022)
- ACM The Web Conference (WWW'2022)

REVIEWER

- ACM Transactions on Intelligent Systems and Technology (TIST)
- ACM Transactions on Information Systems (TOIS)
- Journal of Intelligent Information Systems
- User Modeling and User-Adapted Interaction
- Personal and Ubiquitous Computing
- Journal Article, Frontiers in Computer Science
- Journal Article, Frontiers in Robotics
- The 42nd Annual Meeting of the Cognitive Science Society (CogSci 2020, 2022)
- Topics in Cognitive Science
- NSF Reviewer (2023, 2024)

INVITED TALK - SEMINAR AT OTHER ACADEMIC INSTITUTIONS

- e-Commerce Group – Faculty of Informatics, Vienna University of Technology, Austria, Dec 20th, 2018
- Dynamic Decision-Making Lab – Carnegie Mellon University, May 1st, 2019 (via online)

OPEN-SOURCED LIBRARIES & DEPLOYED SOFTWARE

- Minimap**:** A Dynamic Decision-Making Interactive Tool for Search and Rescue Missions
  Main developer for single- and multi-player versions: http://janus.hss.cmu.edu:5701/demo/
- Igrid: An interactive goal-seeking task in an environment called "gridworld"
  Main developer. The game has been deployed on DDMLab at Carnegie Mellon University.
  Link: http://janus.hss.cmu.edu:3001/ and http://janus.hss.cmu.edu:3006/
- SpeedyIBL: A Python library to create single or multi-IBL agents that are built based on cognitive Instance-Based Learning Theory (IBLT). Contributor. https://github.com/ddm-lab/speedyibl