

Nick DePalma, Ph.D.

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🌐 <http://petrogly.ph/>

Education

- 2017 📌 **Ph.D., Massachusetts Institute of Technology (MIT) Media Lab**
Committee: *Cynthia Breazeal, Brian Scassellati, Julie Shah*
Research focus: *joint attention, active vision, nonverbal communication*
- 2010 📌 **M.Sc., Georgia Institute of Technology**
Committee: *Andrea Thomaz, Mike Stilman*
Research focus: *embodied learning from demonstrations and imitation learning.*
- 2005 📌 **B.Sc., Georgia Institute of Technology**

Employment

- 2021 – 2023 📌 **Plus One Robotics** (Pittsburgh, PA): *Senior Machine Learning Engineer* Researched and patented a new approach to hard-to-detect parcels from multiple angles that resulted in ~ 10% F1 score improvement against baseline semantic segmentation.
- 2019 – 2021 📌 **Facebook AI Research** (Pittsburgh, PA): *Visiting Scientist, Robotics* Researched sequence-to-sequence and neural process models applied to gesture synthesis methods for embodied agents. Final mAP performance of 0.72 on our metric.
- 2018 – 2020 📌 **Samsung Research of America, AI Center** (Mountain View, CA): *Staff Research Engineer, Interaction Team* Researched dynamic bayesian models of multi-party gaze cues for addressee estimation targeting the robot prototype. Resulting MuPeT model showed ~ 20% improvement in turntaking prediction against SoA testing.
- 2018 📌 **Futurewei Technologies** (San Francisco, CA): *Software Architect and Lead* Implemented full-stack prototype for a robot tutor to teach children second languages.
- 2010 – 2017 📌 **Massachusetts Institute of Technology**: *Graduate Research Assistant* Conducted experiments in human-robot interaction, designed autonomous behavior, and mentored undergraduates. Researched and developed a first of its kind joint attention system for human-robot interaction.
- 2008 – 2010 📌 **Georgia Institute of Technology**: *Graduate Research Assistant, Socially Intelligent Machines Lab* Researched imitation learning.
- 2006 – 2008 📌 **National Instruments** (Austin, TX): *Software Engineer, Computer Vision Group.*
- 2004 – 2006 📌 **Playmotion** : *Full Stack Engineer* Engine, game, and computer vision design.

Skills










- Software Engineering 📌 **C, C++, Java** (very advanced), **Python, PyTorch** (advanced), **Clojure, Bash** (intermediate), **OpenGL** (basic)
- Certifications 📌 **Deep Learning Nanodegree** (Udacity) and **Nanotechnology**(GA Tech)
- Prototyping 📌 Digital and analog electronics, 3D printing, lasercutting, milling
- Communication 📌 Adobe, Lucid, \LaTeX , Keynote, git/Github




Miscellaneous Experience

Certification









2023  Deep Learning Nanodegree. Awarded by Udacity.

Recent Service and Affiliations

- AAAI Symposia  (2023) Organizing committee. Unifying Representations for Robot Application Development
-  (2023) Invited speaker. HRI in Academia and Industry
-  (2021) Organizing committee. Exploring Applications for Autonomous Non-Verbal Human-Robot Interactions
-  (2019) Organizing committee. AI-HRI for Service Robots in Human Environments
-  (2018) Organizing committee. Interactive Learning in Artificial Intelligence for Human-Robot Interaction.
- HRI  (2021) Organizing committee. Exploring Applications for Autonomous Non-Verbal Human-Robot Interactions Workshop
- NeurIPS  (2021) Program committee. Open Problems in Cooperative A.I. Workshop
- ICMI  (2022) Program committee. Full conference.
- IJCW  (2020) Editor. Special Issue on AI.

- Foresight Institute  (2022-Present) Affiliate
- Fine Arts Miracles  (2019-2020) Member, Fine Arts Miracles, Pittsburgh.
- Face and Gesture  (2018) Program Committee. Full conference.

Exhibitions

- 2014  Sensible Cities Group. Local Warming, GLOW Festival. Eindhoven, NL. November
-  Sensible Cities Group. Local Warming, Architecture Biennale, Venice, Italy. June-October [[Link](#)]
- 2010  Andrea Thomaz, Maya Cakmak, Michael Gielniak, Nick dePalma. Interactive Learning with the Simon Robot. *CHI Interactive Exhibition*. April 2010, Atlanta, GA.
- 2006  Matt Flagg, Nick dePalma, Jeremy Barrett, Clint Higley. SxSW Interactive Red Bull VIP House. *South by Southwest March 2006*, Austin, TX.
-  Matt Flagg, Nick dePalma, Jeremy Barrett, Patrick Burns. Computer vision based games in daylight *AT&T Release Party* February 2006, NYC Times Square, Military Island.
- 2005 – 2006  Greg Roberts, Matt Flagg, Ben Buchwald, Nick dePalma, Jeremy Barrett, Patrick Burns, Clint Higley. AT&T Interactive Cell Phone Based Games on Reuter's Display. New Years Eve, NYC Times Square.
- 2005  Greg Roberts, Matt Flagg, Nick dePalma, Jeremy Barrett, Ben Buchwald, Patrick Burns. Computer Vision Based Games Exhibit. *Wired Nextfest* July 2005, New York, NY.
- 2004  Greg Roberts, Matt Flagg, Nick dePalma, Jeremy Barrett, Ben Buchwald. Computer Vision Based Games Exhibit. *Wired Nextfest* July 2004, Chicago IL.

Research Publications

Journal Articles

- 1 Suguitan, M., DePalma, N., Hoffman, G., & Hodgins, J. (2024). Face2gesture: translating facial expressions into robot movements through shared latent space neural networks (forthcoming). *Journal of Human-Robot Interaction*, 13(1).
- 2 Williams, T., Matuszek, C., Mead, R., & DePalma, N. (2024). Scarecrows in oz: the use of large language models in hri (forthcoming). *Journal of Human-Robot Interaction*, 13(1).
- 3 Phillips, R., Musikanski, L., Manson, M., Bradbury, J., Fraizer, L., Rakova, B., ... Smart, A. (2020). Introduction to the special issue: intersections of artificial intelligence and community well-being. *International Journal of Community Well-Being*, 3(4), 425-435.
- 4 Breazeal, C., DePalma, N., Orkin, J., Chernova, S., & Jung, M. (2013). Crowdsourcing human-robot interaction: new methods and system evaluation in a public environment. *Journal of Human-Robot Interaction*, 2(1), 82-111.
- 5 Cakmak, M., DePalma, N., Arriaga, R. I., & Thomaz, A. L. (2010). Exploiting social partners in robot learning. *Autonomous Robots*, 29(3-4), 309-329.

Conference Proceedings

- 1 DePalma, N. & Hodgins, J. (2021). Factor exploration of gestural stroke choice in the context of ambiguous instruction utterances: challenges to synthesizing semantic gesture from speech alone. In *Ro-man 2021-the 30th ieee international symposium on robot and human interactive communication*. IEEE.
- 2 DePalma, N., Smith, J., Chernova, S., & Hodgins, J. (2021). Toward a one-interaction data-driven guide: putting co-speech gesture evidence to work for ambiguous route instructions. In *International conference of human robot interaction. late breaking report*. ACM.
- 3 DePalma, N. & Breazeal, C. (2016b). Towards learning through robotic interaction alone: the joint guided search task. In *Proceedings of the artificial intelligence and the simulation of behavior (aisb)*.
- 4 Jung, M. F., Lee, J. J., DePalma, N., Adalgeirsson, S. O., Hinds, P. J., & Breazeal, C. (2013). Engaging robots: easing complex human-robot teamwork using backchanneling. In *Proceedings of the 2013 conference on computer supported cooperative work* (pp. 1555-1566). ACM.
- 5 Chernova, S., DePalma, N., Morant, E., & Breazeal, C. (2011). Crowdsourcing human-robot interaction: application from virtual to physical worlds. In *2011 ro-man* (pp. 21-26). IEEE.
- 6 Cakmak, M., DePalma, N., Arriaga, R., & Thomaz, A. L. (2009). Computational benefits of social learning mechanisms: stimulus enhancement and emulation. In *2009 ieee 8th international conference on development and learning* (pp. 1-7). IEEE.
- 7 Cakmak, M., DePalma, N., Thomaz, A. L., & Arriaga, R. (2009). Effects of social exploration mechanisms on robot learning. In *Ro-man 2009-the 18th ieee international symposium on robot and human interactive communication* (pp. 128-134). IEEE.

Symposia

- 1 DePalma, N. & Hodgins, J. (2020). Leveraging knowledge asymmetries to evaluate synthesized gesture based communication in human-robot interaction. Workshop in AI & Its Alternatives in Assistive & Collaborative Robotics: Decoding Intent at Robotics: Science and Systems.
- 2 DePalma, N. (2019). Modeling who speaks next for less structured multi-party interactions." Samsung Technical Report.

- 3 Hart, J. W., Freedman, R. G., DePalma, N., Iocchi, L., Leonetti, M., Senft, E., ... Mead, R. (2019). Artificial intelligence for human-robot interaction (ai-hri): service robots in human environments. The proceedings of the AAAI Fall Symposium Series: Service Robots in Human Environments.
- 4 Bullard, K., DePalma, N., Freedman, R. G., Hayes, B., Iocchi, L., Lohan, K., ... Williams, T. (2018). Proceedings of the ai-hri symposium at aaai-fss 2018. Proceedings the Fall Symposium of the Association for Artificial Intelligence. Annual Symposium on Interactive Learning in Artificial Intelligence for Human-Robot Interaction.
- 5 Rakova, B. & DePalma, N. (2018). Minority report detection in refugee-authored community-driven journalism using rbms. Proceedings of the Neural Information Processing Systems (NeurIPS). Workshop on AI for Social Good.
- 6 DePalma, N. & Breazeal, C. (2016a). Nimbus: a hybrid cloud-crowd realtime architecture for visual learning in interactive domains. Proceedings of ACM/IEEE International Conference on Human-Robot Interaction. Annual Workshop on Cognitive Architectures for Human-Robot Interaction.
- 7 DePalma, N. & Breazeal, C. (2015). A sensorimotor account of attention sharing in hri: survey and metric. Proceedings the Fall Symposium of the Association for Artificial Intelligence. Annual Symposium on Artificial Intelligence and Human-Robot Interaction.
- 8 DePalma, N. (2014). "quis custodiet ipsos custodes?", artificial intelligence and the interactionist stance. Proceedings the Fall Symposium of the Association for Artificial Intelligence. Annual Symposium on Artificial Intelligence and Human-Robot Interaction.
- 9 Jung, M., DePalma, N., Chernova, S., Hinds, P., & Breazeal, C. (2012). Human-robot collaboration: bids and bytes. Proceedings of ACM/IEEE International Conference on Human-Robot Interaction. Annual Workshop on Human-Agent-Robot Teamwork.
- 10 DePalma, N., Chernova, S., & Breazeal, C. (2011). Leveraging online virtual agents to crowdsource human-robot interaction. Proceedings of International Conference on Computer Human Interaction (CHI). Workshop on Crowdsourcing and Human Computation.

References

Available on Request