

Dmitriy Babichenko

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Education

- 2018. PhD, University of Pittsburgh School of Computing and Information
- 2012. MSIS, University of Pittsburgh School of Information Sciences
- 2006. BA, History, University of Pittsburgh School of Arts and Sciences

Faculty Appointments

- September 2026 – Present. Clinical Professor, Undergraduate Program Director, Department of Informatics and Networked Systems (DINS), School of Computing and Information, University of Pittsburgh
- Sept 2024 – August 2025. Clinical Professor, School of Computing and Information, University of Pittsburgh
- Sept 2019 – Aug 2024. Clinical Associate Professor, School of Computing and Information, University of Pittsburgh
- July 2013 – Sept 2019. Professor of Practice, School of Computing and Information, University of Pittsburgh
- Sept 2017 – Sept 2019. Lecturer, School of Pharmacy, University of Pittsburgh (secondary appointment)

Faculty Affiliations

- Institute for Cyber Law, Policy, and Security (Pitt Cyber)
- University of Pittsburgh Center for Latin American Studies
- University of Pittsburgh Center for African Studies
- University of Pittsburgh Center for Behavioral Health and Smart Technology
- University of Pittsburgh Center for Enhancing Treatment & Utilization for Depression and Emergent Suicidality (ETUDES)

Industry Positions

- December 2006 – July 2013. Production Director, Laboratory for Educational Technology, University of Pittsburgh School of Medicine
- August 2012 – May 2013. Adjunct Lecturer, School of Information Sciences, University of Pittsburgh
- December 2003 – November 2006. IT Director, Litigation Solutions, Inc.
- March 2001 – November 2003. Senior Web Developer, Alcoa, Inc.
- April 2000 – March 2001. Senior Web Developer, Mediasite, Inc.
- June 1999 – Apr 2000. Programmer/Web Developer, USA Information Systems
- March 1998 – June 1999. Systems Administrator, Logicon Syscon Inc.

Publications

- Healy, P., Malizio, I., Pho, A., You, K. L., Xu, A., Thomas, T. H., & **Babichenko, D.** (2025, August). Which Part Makes It Work? Mechanism Exploration Through Feature Comparison in a Healthcare-Related Serious Game. In 2025 IEEE Conference on Serious Games and Applications for Health (SeGAH) (pp. 1-8). IEEE.
- Healy, P., Xu, A., Pho, A., You, K. L., **Babichenko, D.**, Malizio, I., & Thomas, T. H. (2024, October). What Matters to Patients: Community-Engaged Design for Healthcare-Related Serious Games. In Proceedings of the 18th European Conference on Games Based Learning. Academic Conferences and publishing limited.
- **Babichenko, D.**, & Swanson, T. (2024, October). HeritageRoots: Developing Interconnected Immersive Experiences for Cultural Preservation and Education. In Proceedings of the 18th European Conference on Games Based Learning. Academic Conferences and publishing limited.
- P. Healy, **D. Babichenko**, S. Orebaugh, M. N. Haase and Z. Fuller, "Comparing the Use of Controllers and Hand Tracking in a Virtual Reality Nerve Block Simulation," 2024 IEEE 12th International Conference on Serious Games and Applications for Health (SeGAH), Funchal, Portugal, 2024, pp. 1-8,
- **Dmitriy Babichenko**, Ana Radovic, Ravi Patel, Alexis Hester, Koehler Powell, Nicholas Eggers, and David Happe. Evaluating the Feasibility of a Multiplayer Role-Playing Game as a Behavioral Health Intervention in Adolescent Patients with Chronic Physical or Mental Conditions. JMIR Research Protocols. 2023
- Pat Healy, Celine Lu, **Dmitriy Babichenko**, Jennifer Silk, Oliver Lindhiem, Reagan Harper, and Abhishek Viswanathan . Using Dr. Zoo, An Exposure-Based Video Game to Reduce Needle Phobia in Young Children: Development and Mixed-Methods Pilot Study. JMIR Serious Games. 2023
- Thomas, Teresa H., Catherine Bender, Margaret Rosenzweig, Sarah Taylor, Susan M. Sereika, **Dmitriy Babichenko**, Kai-Lin You, Martha Ann Terry, Lindsay M. Sabik, and Yael Schenker. "Testing the effects of the Strong Together self-advocacy serious game among women with advanced cancer: Protocol for the STRONG randomized clinical trial." Contemporary Clinical Trials 124 (2023): 107003.
- Khan, Talha, Jacob T. Biehl, Edward G. Andrews, and **Dmitriy Babichenko**. "A systematic comparison of the accuracy of monocular RGB tracking and LiDAR for Neuronavigation." Healthcare Technology Letters (2022).
- Khan, Talha, Edward G. Andrews, Paul A. Gardner, Arka N. Mallela, Jeffrey R. Head, Joseph C. Maroon, Georgios A. Zenonos, **Dmitriy Babichenko**, and Jacob T. Biehl. "AR in the OR: exploring use of augmented reality to support endoscopic surgery." In ACM International Conference on Interactive Media Experiences, pp. 267-270. 2022.
- Healy, Pat, Kai-Lin You, Andrew Xu, Teresa Hagan Thomas, and **Dmitriy Babichenko**. "A Narrative Serious Game to Teach Self-Advocacy Skills in Advanced Cancer." Procedia Computer Science 206 (2022): 162-172.
- **Dmitriy Babichenko**, Behnam Rahdari, Ben Stein, Suraj Subramanian, Claudia Ramos Rivers, Gong Tang, and David Binion. Classification Models For Predicting Inflammatory Bowel Disease Healthcare Utilization. In Proceedings of HEALTHINF 2022, 15th International Conference on Health Informatics. 2022.

- **Dmitriy Babichenko**, Edward G. Andrews, Stephen P. Canton, Eliza Beth Littleton, Ravi Patel, Dukens Labaze, and Andrew Mills. Evaluating Effect of Microsoft Hololens on Extraneous Cognitive Load During Simulated Cervical Lateral Mass Screw Placement. In proceedings of ICICT 2022 - The 5th International Conference on Information and Computer Technologies. 2022.
- **Dmitriy Babichenko**, Patrick Healy, Cynthia Danford." MountainQuest: Designing An Action/Adventure Game to Teach Children About Nutrition." In European Conference on Games Based Learning. Academic Conferences International Limited, 2021 (accepted for publication).
- Rahdari, B., Brusilovsky, P., **Babichenko, D.**, Littleton, E., Patel, R., Fawcett, J., Blum, Z. Grapevine: A Profile-Based Exploratory Search and Recommendation System for Finding Research Advisors. In proceedings of 83rd Annual Meeting of the Association for Information Science and Technology.
- Rahdari, B., Brusilovsky, P., **Babichenko, D.** Personalizing Information Exploration with an Open User Model. In proceedings of 31st ACM Conference on Hypertext and Social Media (HT'20)
- Anderson, Alyce, Cynthia Cherfane, Benjamin Click, Claudia Ramos-Rivers, Ioannis E. Koutroubakis, Jana G. Hashash, **Dmitriy Babichenko**, et al. "Monocytosis Is a Biomarker of Severity in Inflammatory Bowel Disease: Analysis of a 6-Year Prospective Natural History Registry." Inflammatory Bowel Diseases (2021).
- Koutroumpakis, Filippas, Maham Lodhi, Maaz Ahsan, Claudia Ramos Rivers, Marc Schwartz, Jana G. Hashash, **Dmitriy Babichenko** et al. "The impact of cholecystectomy on long-term disease outcomes and quality of life in patients with Crohn's disease." Inflammatory bowel diseases 27, no. 3 (2021): 336-343.
- Prathapan, Krishnapriya Marangattu, Claudia Ramos Rivers, Alyce Anderson, Filippas Koutroumpakis, Ioannis E. Koutroubakis, **Dmitriy Babichenko**, Xiaoqing Tan et al. "Peripheral Blood Eosinophilia and Long-term Severity in Pediatric-Onset Inflammatory Bowel Disease." Inflammatory bowel diseases 26, no. 12 (2020): 1890-1900.
- **Babichenko, D.**, Healy, P., Gomez, M., Kane-Gill, S., Littleton, B., Cohen, P. and Patel, R, "The Use of Agent-Based Models As Non-Player Characters in Serious Games," *2020 IEEE 8th International Conference on Serious Games and Applications for Health (SeGAH)*, Canada.
- Thomas, T. H., Sivakumar, V., **Babichenko, D.**, Grieve, V. L. B., & Klem, M. L. (2020). Mapping behavioral health serious game interventions for adults with chronic illness: Scoping review. *Journal of Medical and Internet Research Serious Games*, 8(3), e18687. PMID: 32729836
- **Babichenko, D.**, Patel, R., Grieve, V., Canton, S., Healy, P., Littleton, E., Donnellan, N., Andrews, E. SterileAR: Evaluation of Augmented Reality and Computer Vision Approaches for Real-Time Feedback in Sterile Compounding Training. In proceedings of Immersive Learning Research Network conference (iLRN 2020).
- Rahdari, B., Brusilovsky, P., **Babichenko, D.**, Littleton, E., Patel, R., Fawcett, J., Blum, Z. Grapevine: A Profile-Based Exploratory Search and Recommendation System for Finding Research Advisors. In proceedings of 83rd Annual Meeting of the Association for Information Science and Technology.
- Rahdari, B., Brusilovsky, P., **Babichenko, D.** Personalizing Information Exploration with an Open User Model. In proceedings of 31st ACM Conference on Hypertext and Social Media (HT'20)

- **Babichenko, D.**, Druzdzal, M., Tabas, G., Benedict, N., McGee, J.B. (2019) Moving Beyond Branching: Evaluating Educational Impact of Procedurally-Generated Virtual Patients. In Proceedings of IEEE SeGAH 2019 7th International Conference on Serious Games and Applications for Health, 2019.
- **Dmitriy Babichenko**, Lorin Grieve, Elizabeth Bilodeau, and Daryna Koval. "Implementation and Assessment of Three Gamification Strategies Across Multiple Higher Education Disciplines." In European Conference on Games Based Learning, pp. 41-XIII. Academic Conferences International Limited, 2019.
- Abraham, O, Feathers, A, Grieve, LB, **Babichenko, D.** Developing and piloting a serious game to educate children about over-the-counter medication safety. Journal of Pharmaceutical Health Services Research 10, no. 2 (2019): 235-241.
- **Dmitriy Babichenko**, Lorin Grieve, Jonathan Velez, Kailani Bailey, Morgan Freeman, Taylor Wynn, John Lutz, Deborah Farkas, Phillip Lamberty. *Beyond the Scope: Using Motion Capture Data from Bronchoscopy Simulations to Build Feedback Models*. In IConference 2018 Proceedings, Sheffield, England, UK. 2018.
- Ahsan, M., Anderson, A.J., **Babichenko, D.**, Rivers, C.R., O'Keefe, S.J., Regueiro, M.D., Schwartz, M., Hashash, J.G., Click, B.H., Koutroubakis, I. and Dunn, M.A., 2018. Su1890-Finding the Sweet Spot: The Association Between Added Dietary Sugars and Inflammatory Bowel Disease Severity. Gastroenterology, 154(6), pp.S-622.
- Ertem, F.U., Rivers, C.R., Regueiro, M.D., Click, B.H., Koutroubakis, I., Schwartz, M., Watson, A.R., Hashash, J.G., Dunn, M.A., **Babichenko, D.** and Binion, D.G., 2018. Su1824-Biomarkers Associated with Early Endoscopic Recurrence of Postoperative Crohn's Disease. Gastroenterology, 154(6), pp.S-597.
- Gibbs, K.A., Anderson, A.J., Rivers, C.R., Click, B.H., Koutroubakis, I., Regueiro, M.D., Dunn, M.A., Schwartz, M., Hashash, J.G., **Babichenko, D.** and Binion, D.G., 2018. Su1926-Seven-Year Period Prevalence and Characteristics of Hypertension in a Large us Inflammatory Bowel Disease Cohort. Gastroenterology, 154(6), pp.S-635.
- Alyce JM Anderson, Benjamin Click, MD, Claudia Ramos-Rivers, MD, Debbie Cheng, MD, **Dmitriy Babichenko**, Jana G. Hashash, MD, Michael A. Dunn, MD, Marc Schwartz, MD, Jason Swoger, MD, Arthur Barrie, III, MD, PhD, Miguel Regueiro, MD, David G Binion, MD. *The lasting impact of Clostridium difficile infection in inflammatory bowel disease: a propensity-score matched analysis*. Inflammatory Bowel Diseases Journal, June 5, 2017.
- Click, B., Anderson, A. M., Koutroubakis, I. E., Rivers, C. R., **Babichenko, D.**, Machicado, J. D., & Swoger, J. (2017). "Peripheral Eosinophilia in Patients With Inflammatory Bowel Disease Defines an Aggressive Disease Phenotype." The American Journal of Gastroenterology, ajg2017402.
- Anderson, A. J., Umakanthan, S., **Babichenko, D.**, Rivers, C. R., Click, B. H., Koutroubakis, I., & Barrie, A. (2017). "Poor Consumption of Fiber, not fat, is Associated with Active Disease in Inflammatory Bowel Disease." Gastroenterology, 152(5), S365.
- Jonathan E. Velez, Taylor M. Neal, **Dmitriy Babichenko**, Rae-Djamaal Wallace, James McCray, Sean C. Jenkins, Adayshia Haddock, Akisha Jordan. "Leveraging Social Media to Generate Narrative for Virtual Patient Simulations." in *IConference 2017 Proceedings*, Wuhan, China, 2017.
- Bhattacharya, Abhik, Rao, Bhavana B, Koutroubakis, Ioannis E, Click, Benjamin, Vargas, Eric J, Regueiro, Miguel, Schwartz, Marc, Swoger, Jason M, **Babichenko, Dmitriy** and Hartmann, Douglas. "Silent Crohn's Disease Predicts Increased Bowel

- Damage During Multiyear Follow-up: The Consequences of Under-reporting Active Inflammation." *Inflammatory Bowel Diseases*, 22-11, p 2665--2671, 2016.
- Anderson, Alyce JM, Benjamin Click, Claudia Ramos-Rivers, **Dmitriy Babichenko**, Ioannis E. Koutroubakis, Douglas J. Hartman, Jana G. Hashash et al. "Development of an Inflammatory Bowel Disease Research Registry Derived from Observational Electronic Health Record Data for Comprehensive Clinical Phenotyping." *Digestive Diseases and Sciences* (2016): 1-10.
 - Mitchell, Leona, and **Dmitriy Babichenko**. "Team-Based Projects: Pittsburgh Website Redesign." *Educause Review*. Educause Review, 19 Sept. 2016. Web. 19 Sept. 2016.
 - **D. Babichenko**, M. Druzdzal, L. Grieve, R. Patel, J. Velez, T. Neal, J. McCray, R.-D. Wallace, and S. Jenkins, "Designing the Model Patient: Data-Driven Virtual Patients in Medical Education," in *Proceedings of IEEE SeGAH 2016 4th International Conference on Serious Games and Applications for Health*, 2016.
 - **D. Babichenko** and M. Druzdzal, "ADMIT - A Web-Based System to Facilitate Graduate Admission Process," in *IConference 2016 Proceedings*, Philadelphia, PA, 2016.
 - B. Click, C. Ramos Rivers, I. E. Koutroubakis, **D. Babichenko**, A. M. Anderson, J. G. Hashash, M. A. Dunn, M. Schwartz, J. Swoger, L. Baidoo, A. Barrie, M. Regueiro, and D. G. Binion, "Demographic and Clinical Predictors of High Healthcare Use in Patients with Inflammatory Bowel Disease," *Inflammatory bowel diseases*, Mar. 2016.
 - Curriculum Inventory Specifications. MedBiquitous Consortium, 2013. ANSI/MEDBIQ CI.10.1-2013.
 - **D. Babichenko** and J.B. McGee. "Not reinventing the wheel: Relying on existing web standards to share and access digital resources." Poster, AAMC GIR conference, Miami FL, 2011
 - **D. Babichenko** and J.B. McGee. "Playing Well with Others: Using Web Services For Interoperability and Content Interchange." Presentation, MedBiquitous annual meeting, Baltimore, MD, 2011
 - **D. Babichenko**, J. Alexander, C. Toth, P. Kant, J.B. McGee. "vpSim - Virtual Patient Simulation for Education, Training and Assessment." Poster, International Association of Medical Science Educators, annual meeting, New Orleans LA, 2010.

Presentations

- **Dmitriy Babichenko**. Into the Metaverse. Keynote presentation, Metaverse Symposium, Penn State University, State College, PA. June 2022.
- Pat Healy, **Dmitriy Babichenko**. Using Dr. Zoo, An Exposure-Based Video Game to Reduce Needle Phobia in Young Children: Development and Mixed-Methods Pilot Study. Serious Play Conference, University of Central Florida, Orlando, Florida. June 2022.
- Pat Healy, Tristan Maidment, Anthony Sicilia, **Dmitriy Babichenko**, Malihe Alikhani, Deception Detection in Human-Machine Visual Dialog. STAR Talk at the Natural Language, Dialog and Speech Symposium, The New York Academy of Sciences, 2020.
- **Dmitriy Babichenko**. "Moving beyond branching: Designing data-driven virtual patients for health sciences education". Decision Making in Serious Illness Seminar, University of Pittsburgh School of Medicine, Pittsburgh, PA. 2019.

- Lorin Grieve, **Dmitriy Babichenko**, Ravi Patel. Mapping Game Design to Transformational Outcomes. Serious Play Conference. University of Buffalo, Buffalo, NY. 2018
- **Dmitriy Babichenko**, Lorin Grieve, Ravi Patel. University-Wide Game Jam for Clinical Research and Practice Concepts. Serious Play Conference. George Mason University, Manassas, VA. 2018
- **Dmitriy Babichenko**, Jonathan Velez, William O'Toole, Ravi Patel. To Scope or Not To Scope. Challenges of Gamifying Clinical Procedures Training. Serious Play Conference. George Mason University, Manassas, VA. 2017
- **Dmitriy Babichenko**, Marek J. Druzdzal, J.B. McGee. Moving Beyond Branching: Artificial Intelligence in Virtual Patients. MedBiquitous Annual Conference, Johns Hopkins University, Baltimore, MD. 2017
- Bilodeau E., Potluri A., **Babichenko D.** Gamification of Oral Diagnosis – A Technology Enhanced Learning Experience. First Annual MedEd Conference, University of Pittsburgh, Pittsburgh, PA. September 2016
- Health Sciences Education Through Collaborative Multiplayer Games. Integrative Conference on Technology, Social Media, and Behavioral Health, University of Pittsburgh, Pittsburgh, PA. May 2, 2016
- Doing More with Less: Gameful Design to Enhance Engagement. Summer Instructional Development Institute, University of Pittsburgh, Pittsburgh, PA. May 3, 2016

Teaching

- CMPINF 0401 – Intermediate Object-Oriented Programming with Java
- INFSCI 0510 – Data Analysis
- CMPINF 1201 – Digital Narrative and Interactive Design
- INFSCI 201 – Intermediate Programming with Python
- INFSCI 1500 - Database Concepts and Applications
- INFSCI 1024 - Analysis of Information Systems
- INFSCI 1025 - Design of Information Systems
- INFSCI 1061 – Game Implementation with Unity3D
- INFSCI 1073 - Mobile Applications Development
- INFSCI 1430 – User Experience Engineering
- IFNSCI 2710 – Database Management Systems

Software Products

- StrongTogether - A Serious Game to teach women with advanced cancer skills to self-advocate. Designed and developed in collaboration with SimCoach games and the University of Pittsburgh School of Nursing.
- Dr. Zoo – a mobile game designed to help change perception of needles in children who are suffering from needle anxiety.
- Alchemy Knights – a transformational digital game for teaching adolescents about the dangers of over-the-counter medication misuse and abuse.
- RxPedition – an interactive drug development serious game designed to teach pharmacy students about the process of bringing a drug candidate to market. Developed in collaboration with the University of Pittsburgh Pharmacy School.
- ModelPatient – a virtual patient simulator based on data-driven computational probabilistic models.

- Oral Pathology Tutor – a web-based oral pathology diagnosis game developed in collaboration with the University of Pittsburgh Dental School.
- vpSim – a virtual patient simulator developed for the University of Pittsburgh School of Medicine.
- Navigator – a custom learning management system (LMS) developed for the University of Pittsburgh School of Medicine.