

ELLIOT G MITCHELL

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EDUCATION

Columbia University , New York, NY PhD Student, Biomedical Informatics	2016 - 2021
Columbia University , New York, NY Master of Arts, Biomedical Informatics	2016 - 2018
Carleton College , Northfield MN Bachelor of Arts in Psychology (with Distinction) Concentration in Cognitive Science	2009 - 2013

WORK EXPERIENCE

Geisinger , Danville, PA (Remote from New York, NY) Senior Data Scientist, Steele Institute for Health Innovation	2021 - Present
Columbia University , New York, NY Graduate Research Assistant	2016 - 2021
Project Well , Stamford, CT (Remote from New York, NY) Data Science and Product Management Consultant	2020 - 2021
Columbia Technology Ventures , New York, NY Technology Ventures Fellow	2019
Epic , Madison, WI Technical Coordinator	2015 - 2016
Epic , Madison, WI Technical Services	2013 - 2016
Bon Appetit at Carleton College , Northfield, MN Student Manager, Food Services	2010 - 2013

HONORS and AWARDS

Stage 1 Finalist CMS AI Health Outcomes Challenge	2019 - 2020
First Place AMIA Student Design Challenge, with Lisa Grossman	2018
First Place AMIA Student Design Challenge, with Lisa Grossman	2017
Third Place HITLAB World Cup of Voice-Activated Technology in Diabetes	2017
Top 5 Finalist Alexa Diabetes Challenge	2017
Phi Beta Kappa Carleton College	2013
Magna Cum Laude Carleton College	2013
Sigma Xi Carleton College	2013
Dean's List Carleton College	2011 - 2013

PUBLICATIONS

- Mitchell EG**, Elhadad N, Mamykina L. Examining AI Methods for Micro-Coaching Dialogs. *CHI 2022: Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems*. April 2022. doi:10.1145/3491102.3501886
- Liu LG, Grossman RH, **Mitchell EG**, Weng C, Natarajan K, Hripcsak G, Vawdrey DK. A deep database of medical abbreviations and acronyms for natural language processing. *Scientific Data*. 2021 Jun 2;8(1):1-9. doi:10.1038/s41597-021-00929-4
- Mitchell EG**, Maimone R, Tobin, JN, Cassells A, Davidson P, Smaldone AM, Mamykina L. Automated vs. Human Health Coaching: Exploring participant and practitioner experiences. *Proceedings of the ACM on Human-Computer Interaction. CSCW 2021* doi:10.1145/3449173
- Mitchell EG**, Heitkemper E, Burgermaster M, Levine M, Miao Y, Hwang M, Desai P, Cassells A, Tobin J, Tabak EG, Smaldone AM, Albers DJ, and Mamykina L. From Reflection to Action: Combining Machine Learning with Expert Knowledge for Nutrition Goal Recommendations. *CHI 2021: Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems* doi:10.1145/3411764.3445555
- Mitchell EG**, Tabak E, Levine M, Mamykina L, Albers D. Enabling Personalized Decision Support with Patient-Generated Data and Attributable Components. *Journal of biomedical informatics*. (2021) 103639. doi:10.1016/j.jbi.2020.103639
- Turchioe MR, Burgermaster M, **Mitchell EG**, Desai PM, Mamykina L. Adapting the stage-based model of personal informatics for low-resource communities in the context of type 2 diabetes. *Journal of biomedical informatics*. 2020 Sep 20:103572. doi:10.1016/j.jbi.2020.103572
- Desai PM, **Mitchell EG**, Hwang ML, Levine ME, Albers DJ, Mamykina L. Personal Health Oracle: Explorations of Personalized Predictions in Diabetes Self-Management. *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems*. doi:10.1145/3290605.3300600
- Mitchell EG***, Grossman LV*, Hripcsak G, Weng C, Vawdrey DK. A method for harmonization of clinical abbreviation and acronym sense inventories. *Journal of biomedical informatics*. 2018 Dec 1;88:62-9. doi:10.1016/j.jbi.2018.11.004
- Grossman LV, Feiner SK, **Mitchell EG**, Creber RM. Leveraging Patient-Reported Outcomes Using Data Visualization. *Applied clinical informatics*. 2018 Jul;9(03):565-75. doi:10.1055/s-0038-1667041

PRESENTATIONS

CONFERENCE and WORKSHOP PRESENTATIONS

- Elliot G Mitchell**, Satish Kalepalli, Grant DeLong, Meg Horgan, Vishal Mehra, David K. Vawdrey, Karen Murphy, Abdul Tariq. Towards Intuitive Features for Useful Explanations of Predictive Models. *American Medical Informatics Association (AMIA) Annual Symposium*. November 2022. Washington, D.C.
- Mitchell EG**, Mamykina L. “There For You Every Day”: Pilot Study of an Automated Conversational Health Coach *American Medical Informatics Association (AMIA) Annual Symposium*. November 2021. San Diego, CA.
- Chen R, Averitt A, Bear Don’t Walk O, Bhave S, Grossman Liu L, **Mitchell EG**, Rodriguez V, Thangaraj P, Sun T. The CLinically Explainable Actionable Risk (CLEAR) Model. *American Medical Informatics Association (AMIA) Annual Symposium*. November 2020. (Virtual)

- Mitchell EG**, Mamykina L. Computational Approaches to Support Automated Conversational Health Coaching. *International Conference on AI in Medicine Doctoral Consortium*, August, 2020. Minneapolis, MN (Virtual)
- Mitchell EG**, Mamykina L. Automated Conversational Health Coaching. Plenary Presentation *National Library of Medicine Informatics Training Conference*, June, 2020. Virtual.
- Mitchell EG**, Mamykina L. The Coach with the Most: Towards Conversational Health Coaching. *Conversational Agents for Health Workshop (CHI 2020)*, April, 2020. Virtual.
- Mitchell EG**, Burgermaster M, Heitkemper E, Levine M, Miao Y, Tabak E, Albers D, Smaldone A, and Mamykina L. Feasibility of a machine learning based method to generate personalized nutrition goals for diabetes self-management. *AMIA Annual Symposium*, November, 2019. Washington, DC.
- Grossman LV, **Mitchell EG**, Hripcsak G, Weng C, Vawdrey DK. A method for harmonization of clinical abbreviation and acronym sense inventories. *National Library of Medicine Informatics Training Conference*, June, 2019. Indianapolis, IN. **Best Presentation Award**
- Mitchell EG**, Burgermaster M, Heitkemper E, Levine M, Miao Y, Desai P, Hwang M, Tabak E, Albers D, Smaldone A, and Mamykina L. 2019. Personalized, data-driven recommendations for diabetes self-management with GlucoGoalie. *Workshop on Interactive Systems in Healthcare (WISH)* May, 2019. Glasgow, UK.
- Mitchell EG**, Burgermaster M, Heitkemper E, Reading M, Levine ME, Miao Y, Desai P, Mamykina L. An Intelligent Voice Assistant for Diabetes Self-Management: T2D2 Taming Type 2 Diabetes, Together. *AMIA Annual Symposium*, November, 2018. San Francisco, CA.
- Mitchell EG**, Burgermaster M, Heitkemper E, Mamykina L. Designing Conversational Interfaces for Diabetes Self-Management. *American Association of Diabetes Educators*, August, 2018. Baltimore, MD.
- Mitchell EG**, Opportunities for Conversational Voice Assistants in Chronic Disease Self-Management. *National Library of Medicine Informatics Training Conference*, June, 2018. Nashville, TN.

CONFERENCE ABSTRACTS

- Mitchell EG**, Mamykina L. From the Curtain to Kansas: Conducting Wizard-of-Oz Studies in the Wild. *CHI Conference on Human Factors in Computing Systems Extended Abstracts (CHI '21 Extended Abstracts)* May 08-13, 2021, Yokohama, Japan. Case Study. doi:10.1145/3411763.3443446
- Lena Mamykina, Arlene M. Smaldone, Suzanne Bakken, Noemie Elhadad, **Elliot G. Mitchell**, Pooja M. Desai, Matthew E. Levine, Jonathan N. Tobin, Andrea Cassells, Patricia G. Davidson, David J. Albers and George Hripcsak. 2021. Scaling Up HCI Research: from Clinical Trials to Deployment in the Wild. *CHI Conference on Human Factors in Computing Systems Extended Abstracts (CHI '21 Extended Abstracts)*. May 08-13, 2021, Yokohama, Japan. Case Study. doi:10.1145/3411763.3443437
- Samantha Olinsky, Pooja M. Desai, Selen Turkay, Elizabeth M Heitkemper, **Elliot G Mitchell**, Lena Mamykina, and Maria L. Hwang. 2021. Meals for Monsters: a Mobile Application for the Feasibility of Gaming and Social Mechanisms. *Extended Abstracts of the 2021 CHI Conference on Human Factors in Computing Systems*. May 08-13, 2021, Yokohama, Japan. doi:10.1145/3411763.3451789
- Mitchell EG**, Maimone R, Mamykina L. Characterizing Human vs. Automated Coaching: Preliminary Results. *CHI EA 20: Extended Abstracts of the 2020 CHI Conference on Human Factors in Computing Systems*. May 2020. doi:10.1145/3334480.3383081
- Juul F, Mamykina L, Almonte A, Sepulveda J, Heitkemper E, **Mitchell EG**, Burgermaster M. User Experiences with Platano, a Dietary Self-Monitoring App for Underserved Patients with Type 2 Diabetes. *Journal of Nutrition Education and Behavior*. 2019 Jul 1;51(7):S44-5. doi:10.1016/j.jneb.2019.05.404

Burgermaster M, Juul F, **Mitchell E**, Heitkemper E, Sepulveda J, Almonte A, Mamykina L. Personal Informatics Technology for Engagement in Community Health (PI-TECH): Mixed Methods Study of Platano, a Motivationally Tailored App for Dietary Diabetes Management. *Current Developments in Nutrition*, Vol. 3, Issue Supplement.1, June 2019, nzz050. P1605119, doi:10.1093/cdn/nzz050.P16-051-19

POSTERS

Grant Delong, Henry K. Philofsky, James Elmore, Stacey Shriner, Sara Hunt, Casey Cauthorn, **Elliot G. Mitchell**, David K. Vawdrey, Abdul Tariq. SentenCy: An Open-source Tool for Improving Biomedical Named Entity Recognition. *American Medical Informatics Association (AMIA) Annual Symposium*. November 2022. Washington, D.C.

Chen R, Rodriguez V, Grossman Liu LV, **Mitchell EG**, Averitt A, Bear Don't Walk O, Bhave S, Sun T, Thangaraj P, and the Columbia DBMI CMS AI Challenge Team. Engendering Trust and Usability in Clinical Prediction of Unplanned Admissions: The CLinically Explainable Actionable Risk (CLEAR) Model. *Machine Learning for Health (MLHC)*. August 2020.

Mitchell EG, Burgermaster M, Heitkemper E, Mamykina L. Perceptions of Conversational Voice Assistants Among Diabetes Care and Education Specialists. *Association of Diabetes Care and Education Specialists*. August 2020.

Mitchell EG, Mamykina L. T2Coach: A conversational agent health coach for diabetes self-management. *Data Science Day 2020: Virtual Preview*. March 2020.

Mitchell EG, Mamykina L. Towards automated conversational health coaching. *New York Academy of Sciences (NYAS) Natural Language, Dialog, and Speech (NDS) Symposium*, November 2019, New York, NY.

Mitchell EG, Levine M, Mamykina L, Tabak E, Albers D. Machine learning for personalized decision support with patient-generated health data. *AMIA Annual Symposium*, November 2019. Washington, DC.

Mitchell EG, Heitkemper E, Ensari I, Albers D, Smaldone A, Mamykina L. Data-Driven Personalization of Nutrition and Physical Activity Goals for Diabetes Self-Management. *Columbia Data Science Institute (DSI) Data Science Day*, 2019. New York, NY.

Mitchell EG, Levine ME, Miao Y, Burgermaster M, Hwang M, Heitkemper E, Smaldone A, Albers DJ, Mamykina L. Automated Generation of Personalized Nutrition Goals for Diabetes Self-Management with Platano. *Columbia Data Science Institute (DSI) Data Science Day*, 2018. New York, NY.

Mitchell EG, Levine ME, Albers DJ, Mamykina L. Reflecting on Diabetes Self-Management Logs with Simulated, Continuous Blood Glucose Curves: A Pilot Study. *AMIA Annual Symposium*, November 2017. Chicago, IL.

CHALLENGES and COMPETITIONS

Mitchell EG, Grossman LV. A Multimodal Conversational Agent to Support Diabetes Self-Management. *AMIA Annual Symposium Student Design Challenge*, 2018 (**First place**)

Grossman LV, **Mitchell EG**. Visualizing the Patient-Reported Outcomes Measurement Information System (PROMIS) Measures for Clinicians and Patients. *AMIA Annual Symposium Student Design Challenge*, 2017 (**First place**)

Mitchell EG, Burgermaster M, Heitkemper E, Reading M, Levine ME, Miao Y, Desai P, Mamykina L. Presenting T2D2: Taming Type 2 Diabetes, Together. *Alexa Diabetes Challenge Demo Day*, 2017 (**Top 5 finalist**)

Mitchell EG, Burgermaster M, Heitkemper E, Reading M, Levine ME, Miao Y, Desai P, Manykina L.
Presenting T2D2: Taming Type 2 Diabetes, Together. *HITLAB World Cup Demo Day*, 2017
(Third place)

INVITED TALKS

Deep Natural Language Processing *Geisinger Machine Learning Reading Group*, July 2022.

From Messy Data to Useful Tools. *Columbia Data Science Institute Scholars Program*, June 2022.

Personalizing Health Goals with Data Science. *Columbia Data Science Institute Health Analytics Center Workshop*, February 2020.

Voice Technology. *Society for Nutrition Education and Behavior (SNEB) Digital Tech for Nutrition Education Roundup*, April 2019.

REVIEW ACTIVITY

<i>American Medical Informatics Association (AMIA) Annual Symposium</i>	2017 - Present
<i>CHI Conference on Human Factors in Computing Systems</i>	2018 - Present
<i>Information Technology & People</i>	2019 - Present
<i>Journal of Biomedical Informatics (JBI)</i>	2020 - Present
<i>Journal of the American Medical Informatics Association (JAMIA)</i>	2020 - Present
<i>Transactions on Interactive Intelligent Systems (TiiS)</i>	2021 - Present
<i>Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT)</i>	2022 - Present
<i>AI and Ethics</i>	2022 - Present

SERVICE and MENTORSHIP

Mentor , AMIA High School Scholars Program	2019
<i>Attend conference with high school students pursuing informatics research</i>	
Student Planning Committee (SPC) , NLM Informatics Training Conference	2019
<i>SPC member for National Library of Medicine Informatics Training Conference in Indianapolis, IN</i>	
Assistant Editor , MedInfo2019	2019
<i>Member of the MedInfo2019 Congress Proceedings Editorial Team</i>	
Student Representative , Columbia University DBMI, New York, NY	2018 - 2020
<i>Elected by peers for two-year term</i>	
Co-Teaching Volunteer , TEALS, New York, NY	2018 - 2019
<i>Introduction to Computer Science at Inwood Academy for Leadership</i>	

PROFESSIONAL MEMBERSHIPS

Association of Computing and Machinery, Special Interest Group on Human-Computer Interaction (SIGCHI)	2018 - Present
American Medical Informatics Association	2016 - Present
The New York Academy of Sciences	2016 - Present

TEACHING EXPERIENCE

Teaching Assistant , Columbia University, New York, NY BINF G4008 - Intelligent Decision Support: History, Paradigms, and Applications	Fall 2019
Workshop Organizer , The Chapin School Senior Intern Week Program Workshop: Evaluating the impact of interactive prototypes and systems	June 2019
Co-Teaching Volunteer , TEALS, New York, NY Introduction to Computer Science at Inwood Academy for Leadership	2018 - 2019
Teaching Assistant , Columbia University, New York, NY BINF G6001 Research Methods	Spring 2019
Teaching Assistant , Columbia University, New York, NY BINF G4003 Symbolic Methods	Spring 2018