Anna N. Baglione

EDUCATION

2022 **PhD in Systems Engineering**, University of Virginia

2018 **M.S. in Informatics**, Indiana University

2016 **B.S. in Computer Science and Engineering**, The Ohio State University
Cum Laude, With Honors in Engineering

EXPERIENCE

2021 - 2023 ***Data Scientist***, Stanson Health, Remote, USA

- Collaborate with Clinical Product team to engineer large language model (LLM) prompts for medical question-answering
- Finetune and evaluate the performance of Google Flan-T5 Sequence to Sequence (Seq2Seq) models on annotated EHR data
- Conduct load testing of LLM prompt calls to Amazon Sagemaker using Locust
- Present experimental findings to internal stakeholders

2021 - 2023 ***Associate Director of Clinical Informatics***, Evolent Health, Remote, USA

- Leverage Medicare/Medicaid claims, EHR, lab, ADT, pharmacy, and SDOH data to generate risk predictions for over 7 million patients using supervised machine learning (XGBoost).
- Collaborate with Managing Director to meet KPIs and make key decisions about feature engineering, modeling, and optimization.
- Collaborate with Engineering and Product teams to coordinate deployment of 6 new stratification models to production.
- Develop and maintain in-house Python packages to facilitate feature engineering, model building, and outcomes prediction.
- Combine modeling results into comprehensive presentations for internal and client communications.
- Mentor Senior Analysts: provide guidance on data extraction using SQL; help develop production monitoring environment.

2018 - 2022 ***Graduate Researcher***, University of Virginia, Charlottesville, VA, USA
Supervisor: Laura Barnes, PhD
Focus Areas: mHealth, digital phenotyping, user engagement

- Lead mixed-methods study of medication adherence among cancer patients.
    - Architect python machine learning pipeline for predicting adherence from smart pill bottle data using supervised learning.
    - Conduct feasibility interviews with lung cancer patients.

    - Collaborate with psychologists and clinicians to develop longitudinal mobile sensor study of adherence.
- Lead refactor of web-based data visualization dashboard.
    - Implement Flask backend with PostgreSQL integration.
    - Optimize existing JavaScript.
    - Mentor undergraduate student assisting with refactor.
- Co-lead a study predicting mood from patient self-report and mobile app engagment data. Developed feature engineering module of python machine learning pipeline for supervised prediction task.
- Co-developed python machine learning pipeline for treatment attrition prediction for a web-based online Cognitive Behavioral Therapy program (MindTrails)
- Co-coded and maintained Angular frontend / Java backend for a web-based online Cognitive Behavioral Therapy program (MindTrails)

2016 - 2018 ***Graduate Researcher***, Indiana University, Bloomington, Indiana, USA
Supervisors: Patrick C. Shih, PhD and James Clawson, PhD
Focus Area: Grieving in the digital age; Designing for music therapists

- Lead mixed-methods study of grieving in online forums (e.g., Facebook).
    - Conducted virtual interviews.
    - Administered online surveys.
    - Conducted qualitative coding
    - Developed theoretical model of complicated grief in the digital age.
- Taught undergraduate informatics classes.
    - Provided guidance in office hours.
    - Graded assignments.
    - Worked with instructors to co-develop exam questions.

2015 ***Undergraduate Researcher***, The Ohio State University, Columbus, OH, USA
Supervisor: Johanna C. Devaney, PhD
Focus Area: Music information retrieval

Worked with a graduate student to identify transition notes in violin recordings using Audacity software

2015 ***NSF REU Intern,*** Louisiana State University, Baton Rouge, LA, USA
Supervisors: Stephen David Beck, PhD and Christopher Branton, PhD
Focus Area: Digital laptop orchestras; Internet of Things

Adapted an existing mobile app framework to communicate with devices in a digital laptop orchestra, with the goal of bettering digital, collaborative music-making experiences. Received Best Poster award at program symposium.

2013 ***NSF REU Intern,*** Iowa State University, Ames, IA, USA
Supervisor: Stephen Gilbert, PhD
Focus Area: Intelligent tutoring systems for engineering equations

Co-designed and coded intelligent tutoring system for engineering equations in Java; Worked with professor to refine algorithmic feedback and customize the tutoring system to better understand student misconceptions

SELECTED PUBLICATIONS

2022 **A. N. Baglione**, L. Cai, A. Bahrini, I. Posey, M. Boukhechba, and P. I. Chow, "Understanding the relationship between mood symptoms and mobile app engagement among patients with breast cancer using machine learning: Case study," JMIR Medical Informatics, vol. 10, no. 6, p. e30712, 2022.

A. N. Baglione et al., "mHealth for Medication and Side Effect Monitoring: Patients' Attitudes Toward Smart Devices for Managing Oral Chemotherapy During Lung Cancer Treatment," in International Conference on Pervasive Computing Technologies for Healthcare, Springer Nature Switzerland Cham, 2022, pp. 570–583.

A. N. Baglione, "Modeling User Behavior in Context: A Systems-Level Approach to Mobile Health," PhD Thesis, University of Virginia, 2022.

2021 K. Daniel, S. Mendu, L. Cai, **A. Baglione**, M. Boukhechba, L. Barnes, and B. Teachman, "Cognitive bias modification for threat interpretations: using passive Mobile Sensing to detect intervention effects in daily life," Anxiety Stress Coping, pp. 1–15, Jul. 2021, doi: 10.1080/10615806.2021.1959916.

A. N. Baglione, M. P. Clemens, J. F. Maestre, A. Min, L. Dahl, and P. C. Shih, "Understanding the Technological Practices and Needs of Music Therapists," Proc. ACM Hum.-Comput. Interact., vol. 5, no. CSCW1, Apr. 2021, doi: 10.1145/3449107.

J. F. Maestre, P. Zdziarska, A. Min, **A. N. Baglione**, C.-F. Chung, and P. C. Shih, "Not Another Medication Adherence App: Critical Reflections on Addressing Public HIV-related Stigma Through Design," Proc. ACM Hum.-Comput. Interact., vol. 4, no. CSCW3, p. 262:1-262:28, Jan. 2021, doi: 10.1145/3434171.

2020 S. Mendu, **A. Baglione**, S. Baee, C. Wu, B. Ng, A. Shaked, G. Clore, M. Boukhechba, and L. Barnes, "A Framework for Understanding the Relationship between Social Media Discourse and Mental Health," Proc. ACM Hum.-Comput. Interact., vol. 4, no. CSCW2, p. 144:1-144:23, Oct. 2020, doi: 10.1145/3415215.

2020 **A. N. Baglione**, J. Gong, M. Boukhechba, K. J. Wells, and L. E. Barnes, "Leveraging Mobile Sensing to Understand and Develop Intervention Strategies to Improve Medication Adherence," IEEE Pervasive Computing, vol. 19, no. 3, pp. 24–36, Jul. 2020, doi: 10.1109/MPRV.2020.2993993.

M. Boukhechba, **A. N. Baglione**, and L. E. Barnes, "Leveraging Mobile Sensing and Machine Learning for Personalized Mental Health Care," Ergonomics in Design, vol. 28, no. 4, pp. 18–23, May 2020, doi: 10.1177/1064804620920494.

S. Mendu, **A. Baglione**, S. Baee, and L. Barnes, "Redesigning the Quantified Self Ecosystem with Mental Health in Mind," in CHI 2020 Workshop on Technology Ecosystems: Rethinking Resources for Mental Health, 2020, p. 5.

S. Baee, M. Rucker, **A. Baglione**, M. K. Ameko, and L. Barnes, "A Framework for Addressing the Risks and Opportunities In Al-Supported Virtual Health Coaches," in Proceedings of the 14th EAI International Conference on Pervasive Computing Technologies for Healthcare, New York, NY, USA, 2020, pp. 251–254. doi: 10.1145/3421937.3421971.

2019 S. Mendu, M. Boukhechba, **A. Baglione**, S. Baee, C. Wu, and L. Barnes, "SocialText: A Framework for Understanding the Relationship Between Digital Communication Patterns and Mental Health," in 2019 IEEE 13th International Conference on Semantic Computing (ICSC), Newport Beach, CA, USA, 2019, pp. 428–433, doi: 10.1109/ICOSC.2019.8665567.

2018 **A. N. Baglione**, M. M. Girard, M. Price, J. Clawson, and P. C. Shih, "Modern Bereavement: A Model for Complicated Grief in the Digital Age," in Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems - CHI '18, Montreal QC, Canada, 2018, pp. 1–12, doi: 10.1145/3173574.3173990.

2017 S. Natarajan, A. Prabhakar, N. Ramanan, **A. Baglione**, K. Siek, and K. Connelly, "Boosting for Postpartum Depression Prediction," in 2017 IEEE/ACM International Conference on Connected Health: Applications, Systems and Engineering Technologies (CHASE), Philadelphia, PA, USA, 2017, pp. 232–240, doi: 10.1109/CHASE.2017.82..

PRESENTATIONS / SYMPOSIA

2017 **A. Baglione,** M. M. Girard, M. Price, J. Clawson, & P.C. Shih. "Mobile Technologies for Grief Support: Prototyping an Application to Support the Bereaved", Poster presented at the Workshop on Interactive Systems in Healthcare (WISH), Washington, D.C., USA, 2017.

2016 **A. Baglione**, C. Branton, & S.D. Beck, "OOT Client-Server Implementation: First Steps in the Orchestra of Things," Paper presented at the SEAMUS National Conference, Statesboro, GA, USA, 2016.

2015 **A. Baglione**, C. Branton, & S.D. Beck, **"**Many Devices, One Orchestra: An Internet of Things Approach to Collaborative Digital Music," Poster Presented at the Council on Undergraduate Research (CUR) Symposium, Arlington, VA, USA, 2015.

FELLOWSHIPS / GRANTS

2021 – 2022 *National Cancer Institute Cancer Center Support Grant* (#2P30CA044579–31)
2020 - 2021 *NIH Biomedical Data Sciences Training Fellowship*
2018 - Present *Peter and Crisler Quick Fellowship,* Jefferson Scholars Foundation at UVA

PROFESSIONAL ACTIVITIES AND SERVICE

2020 - 2021 ***Outreach Chair***, Graduate Engineering Student Council (GESC), University of Virginia
2019 - 2020 ***Mental Health Subcommittee Co-Leader***, Graduate Engineering Student Council (GESC), University of Virginia
2018, 2019 ***Link Lab Student Representative*** at Grace Hopper National Conference, University of Virginia
2017 - 2018 ***Treasurer***, Graduate Informatics Student Organization (GISA), Indiana University
2017 **Graduate Student Mentor**, Proactive Health Informatics REU, Indiana University
2016 - 2017 ***Student Volunteer Coordinator***, School of Informatics, Computing, and Engineering (SICE) Prospective PhD Student Visit Weekend, Indiana University

PROFESSIONAL AFFILIATIONS / MEMBERSHIPS

2018 - Present **Jefferson Scholars Foundation** at the University of Virginia

2016 - Present **Upsilon Pi Epsilon** International Honor Society for the Computing and Information Disciplines

TECHNICAL SKILLS
Python, R, HTML/CSS/JavaScript, SQL