Alejandro Buendia

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https://abuendia.github.io/

EDUCATION

Stanford University Stanford, CA
Ph.D. (in progress), Biomedical Data Science *Entered Sept. 2024*

Columbia University New York, NY
B.A., Computer Science & Mathematics [Double Major] *Feb. 2019*

EXPERIENCE

Columbia University Irving Medical Center New York, NY
Computational Research Lab Manager *Sept. 2023 – July 2024*

– Research co-lead for foundation model of cellular transcription, with focus on application to cancer cell types.
– Managed data analyst and provided engineering and infrastructure support to graduate students and postdoctoral researchers.

Massachusetts Institute of Technology CSAIL Cambridge, MA
Research Engineer / Junior Research Scientist *Feb. 2022 – June 2023*

– Research lead for language modeling over longitudinal healthcare data with downstream clinical predictive applications.
– Assisted research for language modeling over single-cell RNA-seq data and tabular classification using large language models.

Microsoft Cambridge, MA
Data Scientist II, Software Engineer *Jan. 2019 – Jan. 2022*

– [Azure Commercial Global Industries AI] Developed financial entity extraction feature end-to-end and pretrained domain-specific language model backing a financial natural language processing platform.
– [Microsoft Office] Developed machine learning models for intelligent command prediction within Word, Excel, and PowerPoint, and infrastructure for sentence autocomplete in Outlook.

TEACHING & SERVICE

MIT Clinical Machine Learning Group

– With postdoctoral fellow, mentored one master's thesis and two undergraduates in clinical natural language processing research and product deployment.

Microsoft TEALS Outreach Program

– Led team of six employees to develop a three-module introductory course on AI for high school students.
– Presented talk about working at Microsoft to disadvantaged high school students in Boston area.

Microsoft Diversity and Early-in-Career Recruiting

– Co-founded and co-led Diversity & Inclusion Initiative for the Artificial Intelligence Development Program to recruit underrepresented minority graduates, targeting academic and job search conference recruitment.
– Partnered with Black in AI, LatinX in AI, and Women in ML at AI conferences for student recruitment.

SELECTED PUBLICATIONS

X. Fu*, S. Mo*, **A. Buendia***, A. Laurent, A. Shao, M. Alvarez-Torres, T. Yu, J. Tan, J. Su, R. Sagatelian, A. Ferrando, A. Ciccia, Y. Lan, D. Owens, T. Palomero, E. Xing, R. Rabadan. A foundation model of transcription across human cell types. *Nature* (Jan. 2025).

R. Boiarsky, N. Singh, **A. Buendia**, A. Amini, G. Getz, D. Sontag. Deeper evaluation of a single-cell foundation model. *Nature Machine Intelligence* (Dec. 2024).

R. Boiarsky, N. Singh, **A. Buendia**, G. Getz, D. Sontag. A Deep Dive into Single-Cell RNA Sequencing Foundation Models. In *Machine Learning in Computational Biology* (MLCB 2023), Nov. 2023. (Oral Presentation, Top 15%)

S. Hegselmann, **A. Buendia**, H. Lang, M. Agrawal, X. Jiang, D. Sontag. TabLLM: Few-shot classification of tabular data with large language models. In *26th International Conference on Artificial Intelligence and Statistics* (AISTATS 2023), April 2023.

D. Boley and **A. Buendia**. Random walk fundamental tensor and graph importance measures. In *International Workshop on Big Social Media Data Management and Analysis* (IJCAI 2019), Aug. 2019.

A. Buendia and D. Boley. Optimized graph-based trust mechanisms using hitting times. In *International Workshop on Trust in Agent Societies* (AAMAS 2017), May 2017.