Nathan Allen Levin

University of Pennsylvania
Ph.D. Candidate - Learning Sciences and Technology

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Education

Ph.D. Learning Sciences and Technology	University of Pennsylvania	2021 - current
Ed.D. Curriculum and Instruction	Teachers College, Columbia	2019 - 2021
M.Ed. in K-12 Math Education	St. John's University	2015 - 2017
B.A. in Computer Science	Grinnell College	2006 - 2010

Skills

Languages
Python, Java, Bash, C#, SQL, Javascript, HTML/CSS

Domain Knowledge
Clickstream data
- generated features from massive national computer-based assessment logs
- developed maps of student behavior using process mining
- built an award-winning XGBoost based predictive model of student time-management

Intelligent Tutoring Systems
- developed features and conducted dimensionality reduction on school-wide datasets
- currently publishing results of multiple predictive models for disengaged behavior
- implemented a variety of machine learning models (KNN, decision tree, random forest, adaboost) to evaluate performance degradation over 10 years worth of data

Natural Language Processing
- lead researcher on MOOC forum posts analysis project
- conducted sentiment analysis to identify "urgent" posts
- developed unsupervised learning model to enable automated discourse analysis

Software/Environments
Git, AWS, PostgreSQL, Disco tools, Microsoft Suite

Experience

Doctoral Researcher | Penn Center for Learning Analytics
(August 2021 - present)
- Lead researcher on intelligent tutoring system research investigating algorithmic bias in Bayesian Knowledge Tracing models
- Lead researcher on MOOC forum posts analysis NLP project
- AWS administrator for Penn Center for Learning Analytics supporting the development of MOOC Replication Framework

First Place Winner of NAEP Data Mining Competition
(July 2020)
- Developed the top predictive model of student time-management behavior using time-series modeling, process mining, and expert feature engineering.
- XGBoost model achieved 0.658 ROC AUC, surpassing all previous results
- Results published in the Journal of Educational Data Mining:
  Levin, Nathan A. "Process Mining Augmented Item Analysis to Predict Time Management on Computer-Based Assessments" *Journal of Educational Data Mining*

Creator and Host | Learning Machine Podcast | www.learningmachinepodcast.com
(July 2021 - Present)

- Conceptualized and created learning machine podcast an interview-based show bringing cutting edge education research to practitioners in the field

Curriculum Designer/Strategy Consultant | Edhesive
(July 2019 - Present)

- Designed fully sequenced and paced, digital curriculum for Computer Science A
- Created and lead remote professional development for roll out of Computer Science A to 6 teachers in the KIPP school network, developed annual expansion to other KIPP schools
- Consultant on Amazon Future Engineer(AFE) partnership
    - developed robotics activities with AFE and Edhesive teams

Center for Public Research and Leadership
Research Assistant
(August 2020 - August 2021)

- Designed and implemented measurement system for large education-focused foundation
    - Built Excel data dashboard leveraging numerous pivot tables and power query tables
    - Created data pipeline for collection, analysis, and presentation of annual performance data

Summer Associate
(June 2020 - August 2020)

- Developed strategic alignment framework for teacher preparation portfolio of large education-focused foundation
    - Created and implemented data collection and analysis pipeline for annual evaluation

Technology and Computer Science Instructor | Brooklyn Technical High School
(July 2015 – June 2019)
AP Computer Science Principles – 4 years
    - Beauty and Joy of Computing(BJC) Curriculum – used "Snap!" And Python languages
- AP Computer Science Java – 3 years
- Developed and Organized Software Engineering Senior Symposium
    - Engaged 40+ representatives from technology companies across NYC
- Directed curriculum development team for rolling out AP Computer Science Principles
    - Built AP CSP program for all Sophomores - 1500+ students per year
    - Lead inquiry team evaluating instruction and student performance

Associate Program Director | The World Scholar's Cup
(August 2013 – June 2015)

- Facilitated an international academic program for middle and high school students
- Directed regional tournaments in 30 countries, 100+ schools, with groups of 1000+ students

Software Engineer | Epic
(September 2010 - June 2011)

- Created backend and frontend functionality for pharmacy application in electronic medical record software suite
- Developed application components in Visual Basic and database queries in Caché

References Available Upon Request