

# Benyamin T. Tabarsi

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## EDUCATION

**North Carolina State University**, Raleigh, NC || Ph.D. in Computer Science Aug 2021 – May 2026 (Anticipated)

- Courses: Design and Analysis of Algorithms, Automated Learning and Data Analysis, HCI, Text Mining in Education

**Science and Research Branch of Azad University**, Tehran, Iran || M.S. in Computer Engineering Sep 2016 – Aug 2019

- Courses: Data Mining, Big Data Analytics, Advanced Software Engineering, Software Architecture GPA: 19.31/20 (A+)
- Ranked 1<sup>st</sup> among the Computer Software Engineering class of 2016 for attaining the highest overall GPA

**University of Mazandaran**, Babolsar, Iran || B.S. in Information Technology Engineering Sep 2011 – Aug 2016

- Courses: Object-Oriented Programming, Data Structures, Database Systems, Software Engineering, Artificial Intelligence

## TECHNICAL SKILLS

**Languages:** Java, Python, C++, R, HTML, CSS, JavaScript, PHP

**Databases and Operating Systems:** MySQL, Windows, macOS, Linux

**Tools/Libraries:** GIT, IntelliJ IDEA, Eclipse, VS Code, PyCharm, MATLAB, CVX, YALMIP, Microsoft Office, Google Workspace, MySQL Workbench, Adobe Photoshop, Scikit-learn, NumPy, Pandas, Matplotlib, Jupyter, Hadleyverse (ggplot2, dplyr, tidyr, readr, stringr)

## EXPERIENCE

**Graduate Research Assistant**, Game2Learn Lab, North Carolina State University, Raleigh, NC May 2022 – Present

**Undergraduate Research Interns' (REUs) Mentor** May 2022 – Aug 2022

- Mentored 3 REUs to conduct research and analysis, build a development plan and successfully complete it

**Summer Camp Counselor**, North Carolina State University, Raleigh, NC Summer 2022

- Led a group of 20+ high school students in a one-week block-based programming camp, focusing on games and art in Snap/

**Graduate Teaching Assistant**, North Carolina State University, Raleigh, NC Aug 2021 – May 2022

- Automated Learning and Data Analysis & Data Structures and Algorithms: Designing coding/written questions, office hours, grading

**Research Assistant**, Distributed Systems Laboratory, Azad University, Iran Nov 2017 – Aug 2019

**IT Support Intern**, Health Center of Babol, Iran June 2015 – Aug 2015

- Provided support and instructed staff to efficaciously use computer systems
- Cooperated in analyzing patients' data to find their attitude and practice regarding breast cancer screening via MATLAB, and SQL

**Full Stack Web Developer**, Freelance, Iran July 2013 – July 2016

- Designed and developed 3 websites and provided support for a website with PHP, HTML, CSS (Bootstrap), and Google Analytics

## PROJECTS

**Detecting Novice Programmers' Struggling Moments by Analyzing their Coding Log Data** Jan 2022 – Present

*Research Project, Game2Learn Lab*

- Identified patterns in the trace log data of novice programmers associated with their struggling moments using Python
- Added a module to iSnap (block-based programming environment) for showing feedback messages using JavaScript
- Collaborated with the research team in programming and analysis using Git and Google Colab and in survey design on Qualtrics
- Published the result of this work as two papers in Data Mining in CS Education (CSEDM) Workshop, 2022 ([Paper 1](#) | [Paper 2](#))

**Analyzing the Interface and Functionalities of Grubhub from different HCI Perspectives** Jan 2022 – May 2022

*Course Project, Human-Computer Interaction (HCI)*

- Conducted heuristic evaluation, cognitive task analysis, competitive analysis, storyboarding, interviews, and prototyping on Grubhub

**Exploring Hot Topics in Academic Papers Investigating Block-Based Programming Languages** Jan 2022 – May 2022

*Course Project, Text Mining in Education*

- Analyzed the abstract, discussion, and conclusion of 30 academic papers by calculating tf-idf, bigram/trigram and word network analysis, and topic modeling with LDA, CTM, and STM using R ([RPods Link](#))

**Predicting Job Titles of the Users of LinkedIn using their Posts** Aug 2021 – Dec 2021

*Course Project, Automated Learning and Data Analysis*

- Calculated ELMo and GloVe embedding representations for a dataset of +34,000 LinkedIn posts in Python
- Implemented PCA for dimensionality reduction and performed classification with machine learning models: K-Nearest-Neighbor (KNN), Decision Tree, Random Forest, Naive Bayes, Neural Network, Logistic Regression, Support Vector Machines (SVMs)
- Gained 75% accuracy in predicting users' occupation and visualized data using Pandas, Matplotlib and Seaborn

**Resource Management in Green Internet of Things towards Reducing Latency** Nov 2017 – Aug 2019

*Master's Thesis Research, Distributed Systems Lab*

- Proposed and solved a joint optimization problem in MATLAB to minimize power consumption and delay at IoT networks ([Paper](#))