

# Muhammad Nouman Abbasi

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## EDUCATION

- Lahore University of Management Sciences (LUMS)** Sept. 2017 – June 2021  
*BS Computer Science* – CGPA 3.97/4.0  
Dean's Honor List with High Distinction | Merit Scholarships  
**Relevant Coursework:** Topics in Internet Research, Topics in Computer and Network Security, Network Security, Machine Learning, Software Engineering, Advanced Programming, Applied Probability
- Beaconhouse Faisalabad** Sept. 2015 – May 2017  
*CIE A Levels* – 3 A\*  
Best in Pakistan in Physics | Best across three subjects in Pakistan

## RESEARCH

- Data voids** Sept. 2020 – Present  
*Senior year project* | **Dr. Rishab Nithyanand (University of Iowa)**  
Understand how manipulators exploit missing data to influence search results
- Developed an algorithm based on TF/TF-IDF to analyze real-time forum data
  - Designed and visualized the data pipeline for the project
  - Used different semantic analysis techniques including Word2Vec and BERT models
  - Optimized database to reduce SQL query times from roughly 30 minutes to just 2 minutes
  - Conducted pilot experiments on Google search results of potential data voids for semantic analysis
- Federated Learning in Developing Countries** Feb. 2020 – May 2020  
*Semester research project* | **Dr. Ihsan Ayyub Qazi (LUMS)**  
Optimize federated learning for low-end devices in developing countries
- Devised ways of splitting a machine learning model into smaller subset models for low-end devices
  - Formulated an aggregation technique to consolidate smaller subset model into a larger model
  - Achieved 4x decrease in training compute time for subset models than complete models
  - Replicated results from related works for comparison with alternative approaches
  - Prepared a comprehensive technical report available [here](#)
- Madadgaar.com.pk** June 2020 – Sept. 2020  
*Students as Co-Researchers (ScR) program project* | **Dr. Suleman Shahid (LUMS)**  
Connecting blood donors and recipients using an automated peer-to-peer model
- Conducted surveys in coordination with hospitals and other blood banks
  - Explored different ways to develop a user-friendly interface for the low-literate population
  - Developed and deployed a [website](#) with focus on ease-of-use and automated donor matching
  - Integrated in-browser, email and SMS notifications

## WORK EXPERIENCE

- Lahore University of Management Sciences (LUMS)**
- Undergraduate Research Assistant* | Internet Security and Privacy Lab (ISPL) Aug. 2020 – Present
- Worked on an Internet Measurement research project on data voids exploitation
- Teaching Assistant* | Topics in Internet Research Jan. 2021 – May 2021
- Organizing help sessions and grading course components including paper summaries and presentations
- Teaching Assistant* | Data Structures Jan. 2020 – May 2020
- Designing course components including programming assignments, grading and organizing help sessions
- Head Teaching Assistant* | Probability Sept. 2019 – Dec. 2019
- Responsible for grading course components and organizing tutorials
- Educative, Inc**
- Developer Advocate* | Intern June 2020 – Present
- Created short, interactive software development courses and wrote engaging tutorials

## PROJECTS

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**Ratefessor** | *Python, Django, SQLite, Heroku, GitHub* Sept. 2020 – Dec. 2020

- Developed a website to rate and review professors
- Integrated direct SQL query execution using SQLite
- User authentication functionality to allow only LUMS students to register
- Integrated review voting mechanism for users

**Tripaze** | *JavaScript, React, Firebase, Cypress, GitHub* Jan. 2020 – May 2020

- Developed a website for a tech startup to connect tourists with trip-organizing companies
- User authentication to register as either a tourist or a trip-organizing company
- Offered advanced search and filtering tools to find trips
- Wrote unit tests using Cypress

### Miscellaneous Projects

- Distributed Hash Table based File Sharing System using Chord protocol
- RBF Neural Network for handwritten digit recognition
- Multiplayer command-line snakes game using socket programming and threading
- Online Connect4 game using asynchronous JavaScript client-server programming

## TECHNICAL SKILLS

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**Languages:** Python, C/C++, SQL, JavaScript, TypeScript, Go, HTML/CSS

**Frameworks:** React, Node.js, Vue.js, Django, Bootstrap

**Developer Tools:** Git/GitHub, Google Cloud Platform, Heroku, VS Code, Adobe XD, Linux

## PROFESSIONAL DEVELOPMENT

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Intel Edge AI Scholarship Program offered by Udacity	Winter 2019
Practical Deep Learning for Coders, v3 by fast.ai (MOOC)	Winter 2019
Ericsson ICT Professional Foundation Program	Fall 2019
Machine Learning by Stanford University offered through Coursera (MOOC)	Summer 2019
Build web apps with ReactJS offered by OpenClassrooms	Summer 2019

## LEADERSHIP ROLES

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**Student Representative** Sept. 2020 – Present

*Council of Equity and Belonging* | LUMS

- Ensured a diverse and inclusive environment for students
- Conducted monthly meetings with students to amplify their concerns to the administration

**Student Editor** Sept. 2020 – Present

*Bytes Newsletter* | LUMS

- Editing and designing of the CS Department quarterly newsletter

**Event Head** Sept. 2018 – Mar. 2019

*PSIFI X, largest science olympiad in Pakistan* | SPADES Society

- Lead a team of students to organize the event
- Awarded Ace of Spades for best event organization

## EXTRACURRICULAR

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- Volunteer Speaker at Public Speaking Workshop 2019 organized by Google Developers Group Lahore
- Member of Facebook Developers Circle Lahore
- Member of INDEX society (Organizes UXPakistan; the largest student-run Design Conference in Pakistan)
- Reached final round for CodinGuru 2.0 (2020) Programming Contest