



# Beyond The Seas: A Unified Higher Study Information Portal

Student Members:

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## Background and Motivation

**Problem:** Graduate school admission process is overwhelming!

- Finding suitable professor based on interest and profile
- Securing a funding or lab position
- Assessing other non-academic factors

**Solution:** Organizing all the necessary information in a unified platform!

- Search and browse research works from labs and professors
- Suggest opportunities aligning with individual profile
- Analyze and visualize non-academic factors based on personal preference

## Scope and Objectives

- Identifying the common difficulties faced by the PhD admission candidates
- Making the tiring and overwhelming process of professor search a bit easier
- Organizing funding information based on research fields and labs (**Web Scraping**)
- Sharing professor review and lab experience
- Custom personalized analysis and visualization based on non-academic preferences (**Machine Learning**)
- Chat-bot for quicker and tailored response

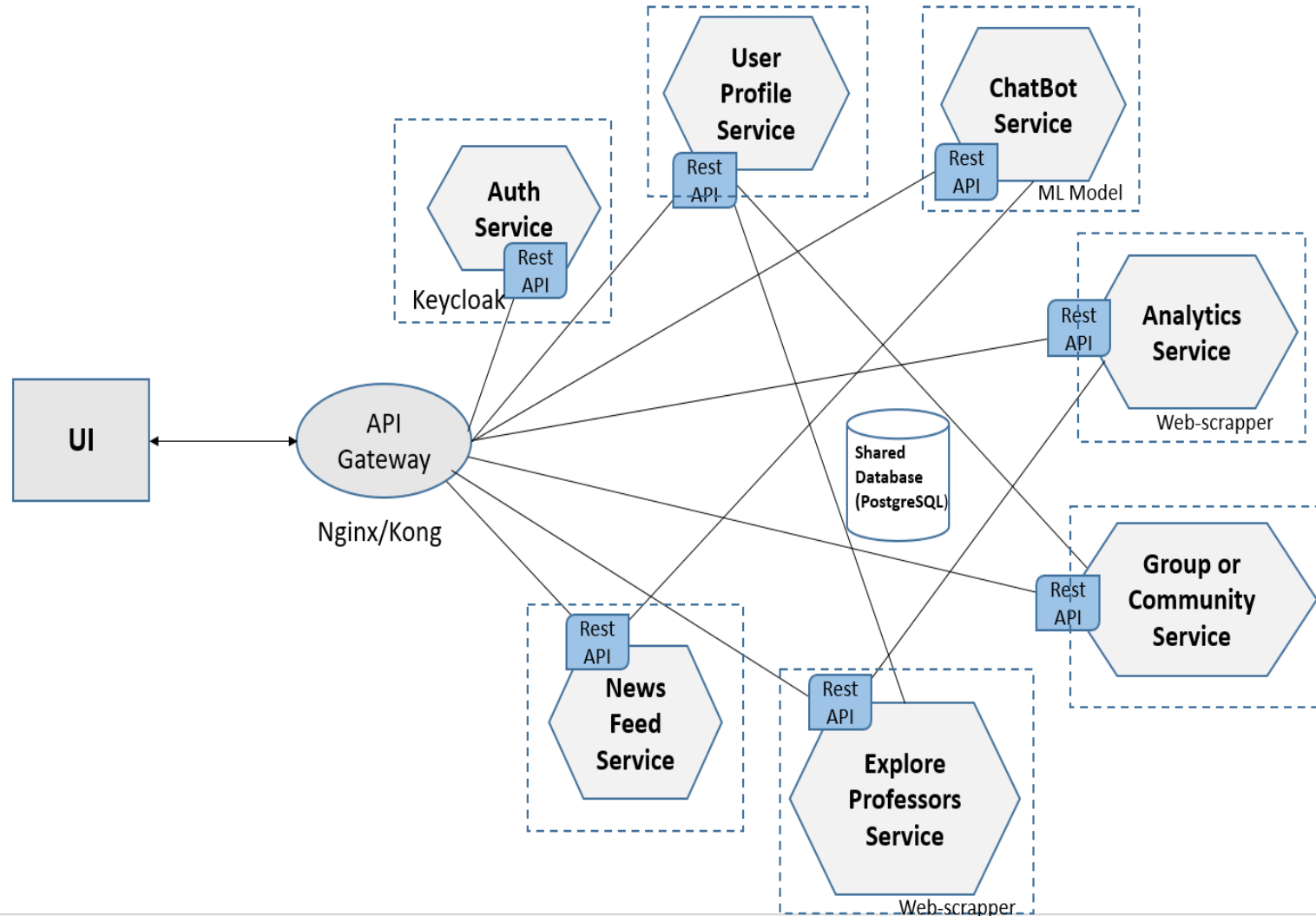
# Proposed Methodology: Requirement Analysis

A questionnaire survey was conducted to identify the obstacles and/or issues the graduate students most commonly face during the admission process

**Target Participants:** Current and recent PhD candidates, alumni across the country and abroad

# Proposed Methodology: System Architecture

- The system features are divided into separate, interdependent services following the **Service Oriented Architectural (SOA)** pattern.
- Explore Professors Service, Analytics Service need to be scaled at the peak time, therefore the need to use a **Microservice** design pattern.
- **Technology Stack:** Python Flask, Next.JS, PostgreSQL, MongoDB, Azure Cloud



# Development: User Profile Module

- Grades and Test Scores
- Research Experience
- SOP
- Areas of Interest
- Personal Information
- Publications and Projects



Click to change your avatar!

**Name:** Redwan  
**Gender:** Male  
**Age:** 23 years **College:** BUET  
**Year of passing:** 2024  
**Phone:** +880XXXXXXXXXX  
**Email:** 1805111@gmail.com  
**CGPA:** 3.XX **GRE:** 3XX  
**Field Of Interest:** Web development, HCI, Networking, AI

**Projects:**  
1. Withered away, link: <https://github.com/withered-away-front>  
2. Kirinku's warehouse, link: <https://github.com/Kirinkus-Warehouse>

**Publications:** 1. Revealing Influences of Socioeconomic Factors over Disease Outbreaks, COMPASS'21, <https://dl.acm.org/doi/10.1145/3530190.3534804>

Edit profile

Homepage



# Development: Professor Module

- Search and Filter
- Bookmark
- Lab and Project Details
- Student Reviews
- Contact Information
- Publications
- Match with Own Profile



## Dr. Ehsan Hoque

**Contact information:**  
Wegmans Hall #3013  
**University of Rochester**, New York, USA  
Email: mehoque AT (cs dot rochester dot edu)  
Personal website: <https://hoques.com>  
Funding available: Yes      Field of interest: Human Computer Interaction, Machine Learning

**Teaching experience:**  
Graduate:  
1. CSE6813: Human Centered Computing (2022) [[Course web page](#)], (2014-2015) [[Course web page](#)]  
2. CSE6804: Computer Vision (2014)  
3. CSE6811: Wireless Ad Hoc Networks (2015-2016) [[Course web page](#)], (2012-2013) [[Course web page](#)]  
4. CSE6207: Advanced Dependable and Fault-Tolerant Computer Systems (2021, 2020, 2017-2018, 2016-17) [[Course web page](#)]

**Publication links:**  
1. DOI:10.3390/healthcare10101929  
2. DOI:10.3390/1999

**Ongoing researches:**  
1. <https://sites.google.com/site/metrarail/>  
2. <https://sites.google.com/site/brainnetwork/>

**Funding Opportunities :**



**2 Months Ago**  
Looking for 2 motivated students who will be working on Human-centered computer-aided tools for vision improvement. NSF will fund the project and students will receive assistant-ship from there. Prospective students are encouraged to mail me.

**Experiences shared by students working under this professor:**

Anonymous Member ★★★★★

Tough professor, dry humor, otherwise a great teacher. Has reasonable expectations, is prepared to help if you have shown an honest independent attempt at tackling material (you are an adult learner right?) PRIOR to reaching out for help.

How much your profile matches with this professor:

bad fit

good fit

average fit

best fit

Add to Shortlist





# Development: Analytics Module

- Location, Weather
- Living Cost
- Crime Rate
- Public Transport
- Medical Facilities
- On-off Campus Job





## Contributions and Challenges

- **Potential Professor Matching:** Students can match their own research experience and interests with desired professors' previous works, current openings and funding requirements.
- **Non-academic Preference:** Living cost, weather, location, crime rate etc. can be combined with available funding offers and academic preferences.
- **Challenges:** The diversity in webpage structure of professors and labs, publication journals, and location data makes it harder to scrap information in a large scale.

## Future Work

- Yet to support a scalable and customizable pipeline to scrap information
- Continuous integration and continuous deployment strategy for automatic updates in implementation level
- More sophisticated NLP techniques and ML algorithms to support better recommendations in the backend