Rabin Banjade

✉ rbnjade1@memphis.edu | ⌂ gokyori.github.io | 📍 Memphis, TN

Education

University of Memphis   Aug. 2017 – Current
PhD in Computer Science   Memphis, TN

- **Research**: Text Mining, Natural Language Processing for Computer Science Education, **Supervisor**: Dr. Vasile Rus

Experience

Philips Research   May. 2022 – August
NLP/AI Research Intern   Boston, MA

- Research, development and evaluation of key phrase extraction using unsupervised embedding based methods and contrastive learning framework

NIH Center of Excellence, Mobile Data to Knowledge Center (MD2K)   Aug. 2017 – Aug. 2020
Research Assistant   Memphis, TN

- Developed end to end machine learning model for just in time intervention based on mobile sensor data.
- Developed, designed and implemented visualization and analytic crowd-tracing infrastructure for mContain - City of Memphis advertised COVID-19 tracing application released in Google Play Store
- Contributor of feature extraction algorithm for PySpark based open source analytic software - Cerebral Cortex (**mCerebrum**)

E & T Nepal   May 2014 – March. 2016
Software Engineering Intern   Kathmandu, Nepal

- Worked on proprietary computational fluid dynamics system for particle image velocimetry

Institute of Engineering, Pulchowk Campus   May 2016 – June 2017
Teaching Assistant   Kathmandu, Nepal

- Created assignments, lectures and graded undergraduate course for C programming

Publications

- **The Behavior of Large Language Models When Prompted to Generate Code Explanations**,Priti Oli, Rabin Banjade, Jeevan Chapagain, Vasile Rus,arXiv preprint arXiv:2311.01490, *To be presented on GAIED NeurIPS'23*
- **Beyond the Imitation Game: Quantifying and extrapolating the capabilities of language models**,Aarohi Srivastava, Abhinav Rastogi, Abhishek Rao....Rabin Banjade et. al,arXiv preprint arXiv:2206.04615
- **NL-Augmenter: A Framework for Task-Sensitive Natural Language Augmentation**, Kaustubh D. Dhole, Varun Gangal, Sebastian Gehrmann, Aadesh Gupta, Zhenhao Li, Saad Mahamood, Abinaya Mahendiran, Simon Mille, Ashish Srivastava, Samson Tan, Tongshuang Wu, Jascha Sohl-Dickstein, Jinho D. Choi, Eduard Hovy, Ondrej Dusek, Sebastian Ruder, Sajant Anand, Nagender Aneja, **Rabin Banjade** ..., arXiv preprint arXiv:2112.02721
- **Domain Model Discovery from Textbooks for Computer Programming Intelligent Tutors**, Banjade Rabin, Oli Priti, Tamang Lasang Jimba, Chapagain Jeevan, and Rus Vasile, The International FLAIRS Conference Proceedings 2021
- **Preliminary Experiments with Transformer based Approaches To Automatically Inferring Domain Models from Textbooks.** Banjade, Rabin, et al. Proceedings of the 15th International Conference on Educational Data Mining. 2022.
- **Automated Assessment of Student Self-explanation During Source Code Comprehension**,J Chapagain, L Tamang, R Banjade, P Oli, V Rus - The International FLAIRS Conference Proceedings, 2022

- **Automatic Question Generation for Scaffolding Self-explanations for Code Comprehension**, Tamang, L. J., Banjade, R., Chapagain, J., Rus, V. (2022). In International Conference on Artificial Intelligence in Education (pp. 743-748). Springer, Cham
- **Automated Assessment of Quality of Jupyter Notebooks Using Artificial Intelligence and Big Code**, Oli Priti, Banjade Rabin, Tamang Lasang Jimba, and Rus Vasile, The International FLAIRS Conference Proceedings 2021

Projects

Self-Explanation for Code Comprehension

- Worked on Data Collection, analysis and inference to study effect of prompting for self-explanation for code comprehension.

Knowledge Tracing using Transformers

- Used transformers to predict if student can answer next question given interaction with previous question or knowledge state on various datasets.

Renewable Energy Survey Tool (REST)

- Developed easy to use mobile based data collection system specially for Alternative Energy Promotion Center, Nepal. This project was also winner of **International Space App Challenge, 2016** (under local challenge)

Technical Skills

Languages : Python, JAVA, HTML/CSS, SQL(MySQL)

Data Science Libraries and Frameworks :Spacy, Hugging- Face, Scikit-Learn, Pandas, Matplotlib, Seaborn, Numpy, PySpark, Tensorflow, Pytorch, Rails, Flask, , Git, Docker