Ritwik (Ricky) Takkar

Phone # redacted github.com/ritwiktakk	rt398@cornell.edu ar rickytakkar.com	455 Gates Hall, Ithaca, NY linkedin.com/in/rt~	
Areas of Interest	Blockchain; Supply Chain Management; Decentralized Sociotechnical Sy	rstems	
Education	Cornell University PhD, Systems Engineering PhD Minor, Computer Science and Computer Engineering Advisors: H. Oliver Gao, Kenneth P. Birman, and Hakim Weatherspoon	08/21-05/26	
	Syracuse University BS, Computer Engineering Advisor: Shiu-Kai Chin	08/17-05/21	
Publications	R. Takkar, K. P. Birman, and H. O. Gao. A Blockchain-Based Framework for Buyer-Driven Global Commodity hains: A Case Example Towards ESG-Driven Traceability in the Apparel Industry. <i>In progress</i> , 2024		
Teaching	ENMGT 5940: Economics and Finance for Engineering Management <i>Graduate Teaching Assistant</i> Case-based exploration of economic models and methods used in analysis by engineers and engineering teams. Led grading staff of 5 graduate sturies and assignments design. Spring 2024: 91 students.	t Cornell University Spring 2024 ses, comparisons, and decision-making dents, and assisted instructor in exam	
	ENMGT 5900/CEE 6910: Project Management Cornell University Graduate Teaching Assistant Spring 2022, Fall 2022, Fall 2023 Focuses both on the "technical" tools of project management (e.g., methods for planning, scheduling, and control) and the "human" side (e.g., forming a project team, managing performance, resolving conflicts). Led grading staff of 7 graduate students, and assisted instructor in exam and assignments design. Spring 2022: 185 students; Fall 2022: 213 students; Fall 2023: 154 students.		
	CS 4414: Systems Programming Graduate Teaching Assistant (Awarded for Service) Senior undergraduate elective course in programming applications with among 4 TAs, taught biweekly recitations, and offered one on one assista hours. Spring 2023: 93 students.	Cornell University Spring 2023 C++ on Linux. Led course grading ance to students during weekly office	
	Academic Excellence Workshop (Precalculus, Calculus I) Instructor Led a one-credit workshop for CS/engineering undergrads to enhance the biweekly sessions. Average enrollment of 6 students per semester.	Syracuse University Fall 2019, Spring 2020, Spring 2021 heir proficiency in calculus through	
Industry Experience	Schonfeld Strategic Advisors Invitee, Inaugural Schonfeld Early Engagement (SEE) Summit – PhD Trac Participated in an in-person interactive "datathon" leveraging real world academic skills in finance with portfolio managers/researchers.	New York, NY k April 2023 assets to discover the application of	
	ParallelChain Lab Hong Kong SAR Software Engineer Intern Summer 2020, Summer 2021 - Built an asset tokenization platform, incorporating REST APIs and biometric authentication, using the Flutter SDK. Documented existing REST APIs detailing parameters, data types, authentication, status, and example curl commands through extensive testing. - Implemented a multi-biometric authentication flow consisting of facial, voice, and palm recognition during KYC on iOS with React Native.		
Open-Source Contributions	WordDefiner English Dictionary https://github.com/ritwiktakkar/WordDefiner The most challenging part of building this app was parsing the complex maps and lists from the Free Dictionary API. Luckily, the Flutter SDK make the deserialized decoded JSON response in the UI quite simple with its L	425+ users on <u>iOS</u> , <u>Android</u> <i>August 2022</i> nested JSON structures consisting of es displaying entities within objects of .istView.builder widget.	

JCP-Stack

https://github.com/ritwiktakkar/JCP-Stack

Designed a web scraper to selectively collect and store research paper results based on journal/conference title and date published from the ACM, Springer, and IEEE Xplore digital libraries. Written in Python using the Selenium WebDriver to automate browsing activity and BeautifulSoup to extract data from HTML.

ShortenMyURL

$https://github.com/ritwiktakkar/shorten_my_URL$

Developed a lightweight URL-shortening app, incorporating the MVVM design pattern and using a third-party API to fetch the short URL, with the Flutter SDK. Integrated custom Google Apps Script to meticulously gather usage data, ensuring user anonymity while harnessing robust analytics to drive enhancements across successive app updates.

Projects Impact of Earnings Calls on Next-Day Common Stock Opening Price

https://rickytakkar.com/projects#earnings

Scraped 48,000 trading days' worth of data from Nasdaq, Yahoo Finance, Zacks, and Alpha Vantage and made heavy use of the Pandas package for data analysis. Partners and I approached this as a regression problem, then framed the question as a binary classification problem to predict the sign of the next day returns.

Programmable Delivery Vehicle

 https://rickytakkar.com/projects#capstone-design
 Fall 2020, Spring 2021

 Designed a programmable delivery remote-controlled vehicle with three other students for our Capstone

 Design Project (SU). Demonstrated items delivery between different indoor locations with programmable

 functionality over Wi-Fi using the SSH protocol. An array of sensors enabled real-time object detection for

 collision avoidance.

System-Theoretic Process Analysis (STPA) Tutorials

Advised by Professor Shiu-Kai Chin (Syracuse University)

Fall 2020

August 2021

August 2020

December 2021

3,070+ users on iOS, Android

- Devised tutorials/examples based on STPA: a novel hazard analysis approach based on the STAMP (Systems-Theoretic Accident Model and Processes) model developed by Prof. Leveson (MIT AeroAstro).
- Generated the substance of a new course offering senior undergraduate and new graduate students the ability to use STPA to analyze systems.

Skills	Programming Languages	Go, Rust, Python (NumPy, Pand (Flutter)	las, Matplotlib), C++, C, C#, Java, Dart
	Tools	AWS (AMB, Cloud9), Azure, Hyp SQL, Linux/Unix, LaTeX	perledger Fabric, Docker, Git, PostgreSQL,
Relevant Coursework	Cornell University	Runtime Verification, Big Messy Data, Cloud Computing, Advanced Systems, Model Based Systems Engineering	
	Syracuse University	C# & Windows Programming, Computer Architecture, Database Management, Operating Systems, Object-Oriented Design, Systems Programming, VLSI Design	
Awards/Honors	Graduate Teaching Assistant Aw	ard, CS Department, Cornell Univers	ity Spring 2023
	Systems Engineering Departmental Fellowship, Cornell University Fall 20		
	magna cum laude, Syracuse University		May 2021
References	1. H. Oliver Gao Howard Simpson Professor Department of Systems Engineering Cornell University	2. Kenneth P. Birman N. Rama Rao Professor Department of Computer Science Cornell University	3. Shiu-Kai Chin Professor Dept. of Electrical Engineering and Computer Science Syracuse University
	hg55@cornell.edu	ken@cs.cornell.edu	skchin@syr.edu