Practicum Showcase & Networking Reception

Innovate in the Wild

DECEMBER 6, 2018

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WHY SPONSOR A PRACTICUM PROJECT?

Put the bright minds at Carnegie Mellon University (CMU) to work for your organization! Information Networking Institute (INI) student teams tackle problems, pilot new ideas, and develop solutions for corporate, research, and government sponsors. Projects span a variety of topics in computing, mobile systems, and security, and range from fundamental research to software development.

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PROGRAM

December 6, 2018 | 5:30-8:00 PM

5:30 PM	**Registration**
5:45 PM	**Welcome Remarks & Sponsor Introductions**
6:00 - 8:00 PM	**Poster Sessions & Networking Reception**

PROJECT SPONSORS

Thank you for making this opportunity possible for our students!

BitClave

Carnegie Mellon

Citi

Common Sense Media

Demisto

Ericsson

Google

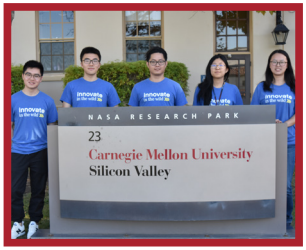
Matrix

NASA

SLAC National Accelerator Laboratory

Visa

FIRST FLOOR TEAMS



BitClave: Protecting Personal Privacy in Blockchain-Based Advertising and Retail

Yulei Li, Je Ming Lin, Kejing Meng, Chao Zhao and Peiyao Zhou

Sharing personal data with untrusted parties over a public blockchain comes with many challenges. This team identified, implemented, tested, and evaluated candidate technologies that will play a role in BitClave's blockchain-based platform.

CMU: Building Privacy-Preserving-Yet-Verifiable IoT Services

Ankit Jena, Nishchala Tangirala and Xinchen Wang

Popular cloud-based IoT services collect a significant amount of potentially sensitive information from end users. This team redesigned an existing cloud-based, data-intensive IoT service to protect private user data while allowing the service provider to verify correct execution of service in an off-cloud platform.

CMU/Ericsson: Traffic Monitoring with Volumetric Display and Holograms

Chia-Yu Chung, Nithin Venkat Sonti and Wurong Wang

Large cities monitor city traffic using multiple video feeds, but could 3D volumetric capture improve understanding? This team simulated traffic scenarios both on multiple camera feeds and through an augmented reality device, and evaluated performance through a user study.

CMU/Google: Physical Space Change Analysis Through Vibration Sensing

Yue Dong, Yuechao Hou, Wei-Hsuan Hsu, Yixian Jiang and Sihan You

Vibration sensing can be used to detect human activity in a physical space. This project deployed vibration sensors, combined with room reconfiguration, to see if it is possible to affect behavior change based on measurable results.

Citi: Identification of Executive Impersonation on Social Media

Yuanwei Chen, Wen Ting Lee and Aoran Wang

Spoofing the identities of senior executives online is an increasingly common way of perpetuating fraudulent activities. This team identified methods and techniques for accurate and rapid identification of impersonated accounts and developed processes to streamline the take-down method.

Common Sense Media: Shine the Light: Building the Flashlight

Pingshan Li, Xiaowei Lu, Mengqi Mu and Jin Zhu

California's 2003 "Shine the Light" law was intended to help citizens understand how their information has been shared, but it is hard to use in practice. Students built an easy-to-use web portal to submit Shine the Light requests, protect users' privacy, and allow users to opt-in to sharing information about their experiences.

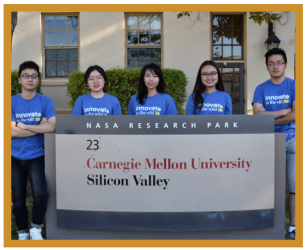
SECOND FLOOR TEAMS

Demisto: Capability Analysis

Zhao Dong, Xuyu Fu and Bharathwaj Tiruputkuzhi Ranganathan
Integrated Innovation Institute Students:
Sang Soo Jun, Dhatri Misra and Prasen Shelar

Cloud deployments move and change too quickly for organizations to rely on manual resources. This team devised ways to integrate cloud service platforms to an aggregator platform that does security orchestration and automation, providing a novel approach to integrate third-party cloud platforms like AWS, Google Cloud and Microsoft Azure within Demisto.

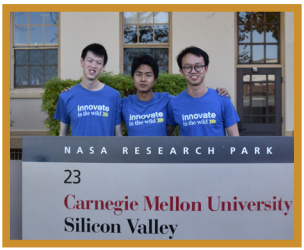
SECOND FLOOR TEAMS



Matrix: Matrix Mobile App

Zhehong An, Ke Jin, Zhexi Liu, Xuan Shi and Liwen Tang

Monarch software is a global media ad sales platform. The team redeveloped the Monarch mobile app experience, including the integration of voice functionality, which identifies users' common mobile tasks and optimizes those experiences.



Matrix: Creation of a Sales OMS/OMS Link for Digital Advertising Execution

Luo Dai, Zengmingyu He and Mengqiao Liu

Students built a new front-end portal that incorporates two key components: a pricing and planning engine, and an execution. This platform allows a media sales team to streamline the steps it takes to bring an advertising campaign from proposal to implementation.

NASA: Optimization of Airport Surface Planning and Scheduling

Mimi Gong, Zi Liang, Weizi Liu, Zhongyi Tong and Liangchen Yi

This team demonstrated the use of probabilistic modeling and analysis tools to develop and implement scalable control and optimization algorithms to improve surface operations at large airports. This work can reduce baggage delays.

SLAC: Clean Coin

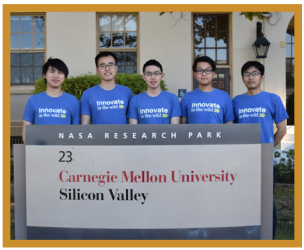
Shiva Avasarala, Chia-Wei Chang, Chinmay Gadgil, Dharini Krishna and Rahul Raja

This team developed a peer-to-peer energy exchange platform using blockchain technology to enable and manage microservice transactions on the distribution grid. Clean Coin highlights how blockchain can serve as an innovative tool for community-governed resources within a solar microgrid framework towards achieving 100% clean energy for all.

SLAC: Future Farming

Zeyuan Tan, Junsheng Xu, Shaoxiong Zhang, Zhi Zeng and Rongpeng Zheng

Low margins and high potential risks are barriers to adopting new and cleaner energy resources in agriculture. Future Farming seeks to optimize energy use, reduce costs, and enable a cleaner farming industry by developing a system that can manage the loads, identify inefficiencies in solar generation, and aggregate different sources of sensor data from farms.



SLAC: Visualization and Analytics for Distributed Energy Resources (VADER)

Boyi Li, Tianming Wang, Yizhou Wei, Wenjie Yang and Yuebin Yang

In its current state, the power distribution system is incapable of handling solar photovoltaic (PV) generation at scale. The VADER platform (Visualization and Analytics of Distributed Energy Resources) solves engineering challenges from ubiquitous distributed energy sources. Students contributed to building the infrastructure to integrate and unify a large number of disparate sensor sources to enable power distribution system planning and operations.

Visa: Anti Reverse-Engineering JavaScript Obfuscation Engine

Chee Hau Chua, Christopher Hensler, Jason Rogers, Jiayu Yu, and Ginger Yu

Computer browsers operate in an untrusted environment. This team evaluated options to scramble JavaScript code while not changing its functionality, and measured tradeoffs in performance. Successful obfuscation ensures that the critical business logic contained in JavaScript cannot be easily revealed or reverse engineered.

Carnegie Mellon University
Information Networking Institute

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The Information Networking Institute (INI) at Carnegie Mellon University (CMU) educates and develops engineers through technical, interdisciplinary master's degree programs in information networking, security, and mobility that incorporate business and policy perspectives. As an integral part of the College of Engineering, the INI draws upon the strengths of colleges across campus to craft a distinctly interdisciplinary learning experience.

The INI's students have the flexibility to pursue coursework within the College of Engineering, the School of Computer Science, the Tepper School of Business and the H. John Heinz III College. The advanced, specialized curriculum combines computer science, electrical and computer engineering, software engineering and information systems.

The unique combination of a rigorous technical curriculum with practical industry-oriented topics and real-world project experience uniquely position graduates for next-generation careers at the pulse of the tech industry.