Viet Nguyen

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EDUCATION	Rutgers University, North Brunswick, New Jersey, USA		
	 Ph.D. in Computer Engineering 	Sep 2013 – present	
	 Adviser: Prof. Marco Gruteser Focus: Mobile Vision, Visible Light Communication and Sensing, Capacitive Touch Communication. 		
	Ritsumeikan University, Shiga, Japan		
	 B.S. in Information Science and Technology 	Apr 2009 – Mar 2011	
	Hanoi University of Technology, Hanoi, Vietnam		
	 Computer Science. Transfered to Ritsumeikan University 	Sep 2006 – Mar 2009	
RESEARCH EXPERIENCE	WINLAB/Rutgers University, North Brunswick, New Jersey, USA		
	 Through-body Touch Communication. Develop a channel model for Through-body Touch Communication. Design and implement a hardware prototype of a wearable ring for per-touch authentication on mobile devices. 		
	 Visible Light Indoor Localization using Ceiling Photosensors. Develop a localization system in which photosensors deployed on the ceiling detect the change in light level caused by human shadow. Build light sensor frontend, signal processing embedded system and backend server. 		
	 Mobility-Aware Virtual Views for Steerable Cameras. Develop a camera recording system for PTZ IP cameras, using OpenCV and libvlc. Develop several computer vision algorithms using OpenCV, including background subtraction, vehicle and pedestrian counting, and license plate recognition (using OpenALPR). 		
	 Flicker-Free Screen-Camera Communication. Propose spatial content-adaptive encoding for screen-camera communication to achieve both high capacity and minimal flicker. Develop content-adaptive encoding techniques that exploit visual features such as edges and texture to unobtrusively communicate information. 		
	 Privacy Respecting Cameras. Explore the use of near-visible/infrared light communication to design "invisible light beacons" where privacy preferences of photographed users are communicated to cameras. Experiment with a design where the beacon transmitters are worn by users on their glasses and transmit privacy codes through ON-OFF patterns of light beams from IR LEDs. 		
INDUSTRY EXPERIENCE	Samsung Research America, Richardson, TX		
	 Research Intern Video Analysis for Smart Building Control: Implement video analysis algorithms a detect their activities from indoor camera feeds. 	Jul 2016 – Sep 2016 to estimate human occupancy and	
	Viettel R&D Institute, Hanoi, Vietnam		
	 Software Engineer Antenna Coverage Simulation software: Design a C++ core library to calculate area from terrain height information of digital maps. Develop a 3D display module to on a digital map, using ArcGIS simulation engine and Microsoft Visual C#. Analog to Digital Converter for Radars: Develop firmware for ARM microcont control other components, which handle different types of input signals from radars 	Jul 2011 – May 2013 antenna coverage over a specific o visualize antenna coverage area trollers to communicate with and systems.	
PUBLICATIONS	CONFERENCES		
LINEC	COM 181 Viet Nauven Mehamed Ibrahim Siddharth Dupavatharam Minith	a Jawahar Marco Crutocor	

[INFOCOM-18] Viet Nguyen, Mohamed Ibrahim, Siddharth Rupavatharam, Minitha Jawahar, Marco Gruteser, Richard Howard, "EyeLight: Light-and-shadow-based Occupancy Estimation and Room Activitity Recognition," in *Proceeding of IEEE Conference on Computer Communications* (INFOCOM) 2018, Honolulu, Hawaii, Apr. 2018.

- [S3-17] Hoang Truong, Phuc Nguyen, Viet Nguyen, Mohamed Ibrahim, Richard Howard, Marco Gruteser and Tam Vu, "Through-body Capacitive Touch Communication," in *ACM MobiCom 2017 - S3 Workshop - The ACM International Conference on Mobile Computing and Networking*, Oct. 2017.
- [IPSN-17] Shubham Jain, Viet Nguyen, Marco Gruteser, Paramvir Bahl, "Panoptes: Servicing Multiple Applications Simultaneously using Steerable Cameras," in ACM/IEEE IPSN 2017: The 16th International Conference on Information Processing in Sensor Networks, Pittsburgh, Pennsylvania.
- [VLCS-16] Mohamed Ibrahim, Viet Nguyen (co-first author), Siddharth Rupavatharam, Minitha Jawahar, Marco Gruteser, Richard Howard, "Visible Light based Activity Sensing using Ceiling Photosensors," in 3rd ACM Workshop on Visible Light Communication Systems (VLCS) 2016, New York City, NY. Best Paper Award.
- [INFOCOM-16] Viet Nguyen, Yaqin Tang, Ashwin Ashok, Marco Gruteser, Kristin Dana, Wenjun Hu, Eric Wengrowski, Narayan Mandayam, "High-Rate Flicker-Free Screen-Camera Communication with Spatially Adaptive Embedding," in *Proceeding of IEEE Conference on Computer Communications (INFOCOM) 2016*, San Francisco, CA. Best-in-session Presentation Award.
 - [VLCS-14] Ashwin Ashok, Viet Nguyen , Marco Gruteser, Narayan Mandayam, Wenjia Yuan, Kristin Dana, "Do not share! Invisible Light Beacons for Signaling Preferences to Privacy-Respecting Cameras ," in *Proceeding of ACM Workshop, VLCS Workshop, 2014*, Maui, Hawaii.
 - [MC2R-14] Viet Nguyen, Marco Gruteser, "First Experiences with Google Glass in Mobile Research," in *Get Mobile - Mobile Computing Communications Review*, October 2014.
- **COURSEWORK** Stochastic Signals and Systems, Communication Network I, Communication Network II, Design and Analysis of Data Structures and Algorithms, System Analysis, Computer Vision, Introduction to Artificial Intelligence, Topics in Mobile Computing, Convex Optimization, Operating Systems Design, Numerical Analysis.

AWARDS & SCHOLARSHIPS	 Best Paper Award - ACM VLCS Workshop 2016 	2016
	 Best-in-Session Presentation Award - IEEE INFOCOM 2016 	2016
	 Student Travel Grant - IEEE INFOCOM 2016 	2016
	 Rutgers TA/GA Professional Development Fund 	2016, 2017, 2018

- TECHNICAL SKILLS
- Programming languages: C, C++, Java, Python, MATLAB.
 - Embedded Systems and Electronics: Experience with microcontroller programming: ARM, AVR, MSP430, MSP432. Familiar with electronics prototyping, testing equipments (oscilloscope, function generator, power supply, etc.) and PCB design programs (Eagle, KiCad).
 - Sensors: Experience with several sensing modalities, including visible light, vision-based (RGB or depth cameras), capacitive sensing, magnetic sensing.
 - **Computer Vision**: OpenCV, Matlab Computer Vision Toolbox.
 - Others: Ubuntu Linux, Cygwin, Bash scripting, Emacs, Visual Studio, Code Composer Studio.

REFERENCES Professor Marco Gruteser Professor of Electrical and Computer Engineering Rutgers University gruteser@winlab.rutgers.edu

- Professor Narayan Mandayam
 Professor of Electrical and Computer Engineering Rutgers University
 narayan@winlab.rutgers.edu
- Professor Kristin Dana Professor of Electrical and Computer Engineering Rutgers University kdana@ece.rutgers.edu