Janus Varmarken

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Objective

A summer 2019 software engineering internship, with special interests in applications for mobile platforms, REST service programming, and ubiquitous computing.

Research Interests

Mobile and ubiquitous computing, edge computing, Internet of Things, software engineering, applications of wireless ad hoc networks, network traffic analysis, security and privacy of mobile devices.

Education

Degree	**Ph.D. Student in Networked Systems**	Enrolled Sep 2017
University	**University of California, Irvine**	Irvine, CA, USA
GPA	**3.83/4.0**	
Courses	CS238 Advanced Operating Systems	A+
	CS237 Middleware for Networked and Distributed Systems	A
	CS230 Distributed Computer Systems	A+
	CS233 Networking Laboratory	A+
	CS232 Computer and Communication Networks	A−
	CS244 Introduction to Embedded and Ubiquitous Systems	B+

Degree	**M.Sc. in Software Development and Technology**	Jun 2017
University	**IT University of Copenhagen**	Copenhagen, Denmark
GPA	**9.60/12.0**	

Degree	**B.Sc. in Software Development**	Jun 2013
University	**IT University of Copenhagen**	Copenhagen, Denmark
GPA	**8.92/12.0**	

Work Experience

Period	**December 2015 — January 2016**	
Employer	**IT University of Copenhagen**	Copenhagen, Denmark
Job Title	**IT Employee**	
Languages	**Java (Android)**	

Preliminary work on integrating an early version of AntMonitor (http://antmonitor.calit2.uci.edu/) with the FeltRadio project (http://itu.dk/~erig/FeltRadio/) for Prof. Shklovski and Prof. Grönvall at ITU, in collaboration with Prof. Markopoulou from UCI.

Period	**September 2014 — January 2015**	
Employer	**University of California, Irvine**	Irvine, California, USA
Job Title	**Visiting Junior Specialist II**	
Languages	**Java (Android)**	

Development of an application capable of monitoring all network traffic on an Android device as a research assistant for the Networking Group led by Prof. Athina Markopoulou.

Period	**October 2013 — July 2014**	
Employer	**Danish Maritime Authority**	Valby, Denmark
Job Title	**Student Worker**	
Languages	**Java**	

Programming e-Navigation systems, i.e. computer systems for vessel navigation with the purpose of increasing safety on board while simplifying the navigator's job.

Period	**March 2012 — September 2013**	
Employer	**Hammerstad A/S**	Herlev, Denmark
Job Title	**Programmer**	
Languages	**C#**	

Programming websites using the ASP.NET framework and programming database tools (e.g. a tool for synchronizing mailing lists stored in a local database with mailing lists stored on MailChimp.com).

Publications

- R. Trimananda, J. Varmarken, A. Markopoulou, B. Demsky, "Spying on Smart Plugs: Network Signatures Beyond Traffic Volume," *in preparation.*
- A. Le, J. Varmarken, S. Langhoff, A. Shuba, M. Gjoka, A. Markopoulou, "AntMonitor: A System for Monitoring from Mobile Devices," *in Proc. of ACM SIGCOMM Workshop on Crowdsourcing and Crowdsharing of Big Internet Data (C2BID)*, London, UK, Aug. 17, 2015.
- A. Shuba, A. Le, M. Gjoka, J. Varmarken, S. Langhoff, A. Markopoulou, "Demo: AntMonitor - Network Traffic Monitoring and Real-Time Prevention of Privacy Leaks in Mobile Devices," *in ACM MobiCom S3 Workshop*, Paris, France, July 2015.
  - Best Demo Award Winner.
- A. Shuba, A. Le, M. Gjoka, J. Varmarken, S. Langhoff, A. Markopoulou, "AntMonitor: A System for Mobile Traffic Monitoring and Real-Time Prevention of Privacy Leaks," *in ACM MobiCom Demos*, Paris, France, Sep 7-10, 2015.

Selected Projects

Painkiller: A software platform for patient-controlled oral analgesia. Developed as part of my MS thesis (see www.varmarken.com/pdf/varmarken-msc-thesis.pdf). Comprised of two iOS apps written in Swift, and a REST service written in Java using JAX-RS and JPA.

TippersEdgeFilter: A generic software framework for filtering smart building sensor samples at the edge of the network. When applied to the hallway surveillance cameras, the framework could reduce the amount of data produced overnight by a single camera

from 1.3GB to less than 100KB by discarding redundant footage of an empty hallway.

msgshm238: a user-space C library that combines the performance of shared memory with the simplicity of message passing by implementing message passing over shared memory. msgshm238 automatically sets up shared memory regions as needed, handles all pointer arithmetic necessary for indexing the shared memory region, and handles synchronization. This all happens under the hood, leaving the application programmer with a simple `send()`/`recv()` API.

Smartether: an Android app and MacOS companion app that automatically enables the smartphone's tethering when the laptop lacks Wi-Fi coverage.

LanDeviceTracker: a Spring Boot based website that lists devices on the same LAN as the server hosting the website. Devices are detected by performing ARP scans.

GitHub: https://github.com/jvmk

Skills

Programming Languages	Java, Swift, Python, C#, C, Scala (limited).
Protocols	HTTP, TCP, UDP.
Data formats	JSON, XML, YAML.
Tools	Git, Gradle.