

CONTACT INFO.

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PROFESSIONAL EXPERIENCE

University of California, Irvine

Irvine, CA

Associate Project Scientist

July 2014 – June 2016

- Designed and built [AntMonitor](#), a system that crowd-sources data collection in Android mobile devices. AntMonitor uses a VPN-based approach to collect network traffic in packet level detail within a mobile device. It supports detection and prevention of privacy leaks in real time, monitors network performance (Wi-Fi, 3G/4G) and learns traffic profiles at network flow and user granularity for the purposes of anomaly detection (scikit-learn).
- Developed a class of algorithms that constructs simple graphs with desired graph properties (joint degree and clustering) in close to linear time. Contributed source code to the [NetworkX](#) Python package for complex networks.
- Proposed a novel approach that infers activities within a city from spatiotemporal cell phone data (CDR).

Postdoctoral Scholar

March 2011 – June. 2014

- Proposed novel network-based sampling methods that collect representative samples of a massive unknown graph.
- Introduced estimation techniques to infer the network structure of large graphs and designed visualization tools, such as [GeoSocialmap](#) that visually represent graphs embedded in geography.
- Designed a system that uses crowd-sourcing to answer simple day-to-day questions tied to a specific location.

Research Assistant

Sept. 2007 – Dec. 2010

- Built a distributed social graph crawler (using Python) that implements a variety of sampling methods. Collected and analyzed user profile information for tens of millions of users in Facebook and Last.FM.
- Identified BitTorrent exploits to launch DDoS attacks and executed small proof-of-concept experiments on the Internet. Our insights received publicity from the [New Scientist](#) and [Slashdot](#).
- Designed a novel IP traceback scheme and developed network tomography mechanisms to infer link loss rates in general topologies by leveraging “network coding” capabilities of computer networks.

Teaching Assistant

Jan. 2006 – Dec. 2006

- Taught undergraduate courses “Computer Networks”, and “Principles of Operating Systems”.

Adball LLC, Founder and CTO

Irvine, CA

Jan. 2008 – Apr. 2010

Co-founded [Adball](#), an online collaboration platform that crowd-sources the concept, content generation, and dissemination of advertising campaigns. Adball won two business plan competitions and served ~ 20K unique users during its six month online presence.

- designed and built platform from scratch using PHP, Javascript, SQL.

CAIDA/UCSD, Research Intern

La Jolla, CA

summer 2008

Analyzed a large dataset (~ 2 TB) of network traffic data received at the DNS root nameservers.

- characterized sources of invalid traffic (using Python) and provided recommendations to reduce it.

Telefonica Research, Research Intern

Barcelona, Spain

summer 2007

Built a peer-to-peer Video-on-Demand system (in C++) that supports forward and backward seeking.

- designed and implemented key mechanisms at the peers and the tracker to achieve seeking within a video with less than five second delay and to reduce the need for an over-provisioned video content server.

AT&T Labs Research, Research Intern

Florham Park, NJ

summer 2006

Analyzed experimental performance analysis of peer-to-peer (BitTorrent, eMule, Gnutella) and client-server (HTTP, FTP) downloading protocols

- wrote software (in Python) that coordinates flash crowd and random downloads on a testbed of 500 machines scattered worldwide (Planetlab).

EDUCATION

University of California, Irvine

Irvine, CA

Ph.D. in Networked Systems (Computer Science)

June 2008 – Dec. 2010

M.S. in Networked Systems (Computer Science)

Sept. 2005 – June 2008

Athens University of Econ. and Business

Athens, Greece

B.S. in Computer Science

Sept. 2000 – Jan. 2005

PROGRAMMING SKILLS

Proficient: Python

Prior Experience: C/C++, Java, PHP, Javascript, Matlab, SQL, bash/awk

PATENTS AND PUBLICATIONS

[Google Scholar profile](#) : 24 peer-reviewed publications with 1,225 citations and h-index 13.

“AntMonitor: A System for Mobile Network Monitoring and its Applications”, provisional, May 2016

“Tracker in P2P systems with DVD functionalities”, US 20120272282 A1, Oct. 2012

“Method for downloading segments of a video file in a peer-to-peer network“, US 20110191418 A1, Aug. 2011

MENTORING

PhD Students: A. Shuba (CS), B. Tillman (NetSys), B. Cici (NetSys), E. Smith (Sociology)

MSc Students: Y. Wang, T. Osterlund, V.S.K. Pulla, C.S. Jammi, P. Tiwari (NetSys)