

Applicant ID: 20932**Name:** Prof. Tsudik , Gene**Contact Information**

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Degree Information

Degree Received	Discipline	Degree Date	Institution	Location
Ph.D.	Computer Science	1991	University of Southern California	Los Angeles, California
M.S.	Computer Science	1987	University of Southern California	Los Angeles, California
B.S.	Computer Science	1985	University of Houston	Houston, Texas

Countries of Interest or Preference

Finland

Italy

France

Regions of Interest or Preference

Europe and Eurasia

East Asia and the Pacific

Professional Trips Abroad

Country	Purpose/Sponsorship	From Date	To Date
Netherlands	Cor Wit Visiting Professor at TU Delft	09/2011	12/2011

Previous Fulbright Grants

Year	Program	Type of Grant
2006-2007	Italy	Fulbright Scholar

Professional Background**Years of College/University Level Teaching Experience:** 19**Applicant's most significant professional accomplishments, major publications, honors and awards**

- 1987-8: Designed first Internet firewall -- Visa Scheme for Internet security. Many current VPNs, firewalls and packet filters are based on it.
- 1991-4: Principal designer of KryptoKnight – the first security service with provable security guarantees; became an IBM product and acknowledged with a rare OIA award.
- 1995-6: Designed iKP - first secure Internet e-payment protocol; became a model for later e-payment designs and remains influential. Acknowledged with IBM OTA award.
- 1998-9: First comprehensive security architecture for Grid Computing; spawned many follow-ons and influenced today's Cloud Computing.
- 2013: Awarded IEEE Fellow grade.
- 2003: Co-founded Interdisciplinary Grad Program in Networked Systems at UCI; consistently ranked #1 by Academic Analytics among specialized graduate programs.

- 2007: Obtained designation as "Center of Academic Excellence in Information Assurance Research". Obtained DoED GAAN (\$0.7Mil) and NSF SFS (\$1.1Mil) funding for security education.

Applicant's motivation for and interest in applying to the Fulbright Specialists Program

My motivation stems mainly from my deep-seated passion for establishing new research and educational collaborative activities with colleagues in foreign academic institutions. My international background and a long record of successful prior (as well as ongoing) multi-lateral collaborations gives me confidence in my ability to help colleagues by inspiring new research efforts and facilitating new (or updating current) educational initiatives.

Broadly speaking, my interests include graduate education and research in Security and Privacy. The general goal is to work with foreign colleagues and establish long-lasting relationships based on: (1) joint research activities that are, ideally, very relevant or specific to the country in question, (2) bidirectional flow of ideas, (3) reciprocal exchanges of graduate students and, (4) initiation of cross-institutional educational programs.

In particular, I aim to pursue collaborations on some or all of the following topics:

- Fostering Graduate Studies in Security and Privacy (CyberTrust)
- Teaching Advanced Seminars and/or Short Courses for Graduate Students
- Research in Genomic Privacy
- Research in Security of Cyber-Physical Systems and Embedded Devices
- Research in New Biometric Authentication Techniques
- Research in Privacy of On-Line Social Networks (OSNs)
- Research in Next-Generation Internet Architectures

I must admit that my motivation is mostly, though not entirely, altruistic. I say that because I also hope to learn from my collaborators: by working closely with colleagues at foreign institutions, I strive to understand culturally dependent nuances and idiosyncrasies of Security and Privacy. I believe that learning these issues would not only broaden my horizons but would also allow me to become a better researcher and educator.

Applicant's preparation to participate in the Fulbright Specialists Program

My initial exposure to international research occurred right after receiving my PhD when I started as a postdoc at the IBM Zurich Research Laboratory. Coming from a relatively homogeneous research lab at USC, the environment at IBM Research was exhilarating, due, for the most part, to the very international staff and deeply collaborative nature of research activities. During subsequent 5 years, I became a full-time research staff member and, later, a project leader. In both capacities, I interacted very intensively with both local colleagues (researchers, managers and graduate students) as well as collaborators at other IBM sites, universities and industrial partners.

In particular, I supervised MS and PhD students from various European Universities. I took part in several research efforts funded by the European Commission. (These EU-funded projects included educational, non-profit and industrial entities all over Europe). I also led an international team of IBM Researchers that created the first secure Internet e-payment methods.

Since leaving industrial research in 2000, I have been involved in numerous international collaborations, including:

- Finland: Nokia Research Center, Aalto University, University of Helsinki
- France: INRIA (French National Computer Science Research Agency), Eurecom Institute
- Italy: University of Trento, University of Padova, University of Rome "La Sapienza", Torino Polytechnic
- United Kingdom: Oxford University, University College London
- The Netherlands: Free University of Amsterdam: Technical University of Delft
- Spain: University of Malaga
- Korea: Seoul National University, Korea Advanced Institute for Science and Technology (KAIST)
- Switzerland: Zurich Federal Polytechnic (ETH-Z), Lausanne Federal Polytechnic (EPFL)
- Germany: Technical University of Darmstadt
- Australia: University of New South Wales, NICTA

As far as education collaborative activities, in the last 12 years, I've taught short courses (aka "PhD summer schools") for PhD students in: Greece (once), Italy (4 times), Taiwan (once) and Israel (once).

In the same time period, I've served as a member of the PhD Dissertation Committees in the following countries: Hungary (1), Switzerland (2), Finland (2), France (4), Italy (2), and Germany (2).

Finally, I've been a Fulbright Scholar at the University of Rome ("La Sapienza") in 2007, which also included two separate inter-country Fulbright visits, each lasting 2 weeks: (1) University of Trento, and (2) University of Malaga.

Examples of potential contributions given the eligible activities for this program

Potential contributions include:

- Consulting with deans and department chairs/heads about the growing importance of research in Security and Privacy, as well as motivating recruitment of faculty members in that area.

- Consulting with relevant faculty members in foreign universities to help bootstrap graduate programs specializing in Security and Privacy.
- Establishing graduate student exchange programs focused in Security and Privacy, whereby (graduate and/or advanced undergraduate) students from the host university and UCI conduct reciprocal short-term visits and get first-hand exposure to teaching and research initiation in a foreign setting.
- Teaching focused graduate courses for graduate students on topics of current and emerging interest, e.g.:
 - Genomic privacy is rapidly becoming important due to emergence of affordable and ubiquitous full genome sequencing for individuals. Human genome is the ultimate biometric, containing a plethora of personal information about ancestors, relatives and progeny of a person. Its sensitivity thus does not dissipate over time. At the same time, individuals can benefit greatly from using their genomes for personalized medical treatments and testing susceptibility to diseases. This necessitates controlled exposure of the genome, which must be reconciled with long-term privacy concerns. My recent and current research on this topic has yielded some interesting results, yet many important challenges remain.
 - Next-Generation Internet: today's Internet is an unprecedented global success, having outlasted and outperformed expectations of its original 1980-s design. It is however reaching its limits. For the past 4 years, I have been a key participant (focused on security in privacy) in one of 4 NSF-funded large research efforts to design new Internet architectures. This effort -- Named-Data Networking (NDN) -- might, in near future, replace the current TCP/IP-based Internet. Due to NSF funding, research has been performed mostly in the US and there has not been sufficient participation from overseas. As someone very familiar with all 4 US-based efforts, my participation in FSP presents an attractive opportunity to present short courses or seminars on emerging Internet architectures. This would also be an opportunity to foster and initiate research projects on new Internet-related topics of interest to foreign counterparts.

Specialization

Major Academic Discipline: Computer Science and Information Technology

Basic Occupational Profile: Four-Year Graduate Faculty

Specialization within this Field: Computer and Information Systems Security

Business/Institutional Affiliations: College or University

Additional Expertise: Additional areas of expertise: • Networking / Internet: my original graduate school education and early research was in the area of networking, specifically, Internet routing. Throughout the years, I maintained familiarity with advances and conducted networking research, outside of my primary area of Security and Privacy. One example is Reliable Multicast for Mobile Ad Hoc Networks (MANETs). Another is synchronous communication in Content-Centric Networks. • Graduate Development: from 2002 to 2007 I served as Associate Dean of Graduate Studies of my school. I also served as CS Dept. Vice-Chair for Graduate Studies, 2009-2011. 2011-2013, I was the Director of Graduate Program in Networked Systems. In these roles, I've had the opportunity to create new graduate programs. I obtained NSA designation of UCI, in 2007, as a Center of Excellence in Information Assurance Research. I attracted about 2M in funding from DoED and NSF to support graduate studies in Security/Privacy.

Activities in which applicant have demonstrated expertise:

- Presenting lectures at graduate and undergraduate levels
- Participating in or leading seminars or workshops at overseas academic institutions
- Taking part in specialized academic programs
- Developing academic curricula or educational materials
- Assessing academic curricula or educational materials
- Conducting teacher-training programs at the college/university level

Languages

Language	Reading	Writing	Speaking
German	Good	Fair	Good
Italian	Good	Good	Good
Russian	Excellent	Excellent	Excellent

Resume



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