Aniketh Girish

Madrid, Spain
✉ *aniketh.girish@imdea.org*
anikethgirish.in

Area of Interest

My research interests range from the analysis of the mobile and IoT privacy with a consumer privacy and data protection spin.

Education

2020 - 2024 **PhD, Privacy and Security**, *IMDEA Networks Institute and University of Carlos III Madrid*, *Madrid, Spain*.
Advisor: Dr. Narseo Vallina Rodriguez

2020 - 2021 **Master's in CyberSecurity**, *University of Carlos III madrid*, *Madrid, Spain*.

2016 - 2020 **Bachelor of Technology, Computer Science and Engineering**, *Amrita Vishwa Vidyapeetham*, *Amritapuri, Kerala, India*.

Research Experience

May 2019 - July 2019 **Research Associate**, *Internet Initiative Japan - Innovation Institute(IIJ-II)*, Tokyo, Japan.
Supervisor: Dr. Hajime Tazaki

- Developed a Docker engine port to macOS. The current release of Docker for Mac employs a small guest Linux VM over Hypervisor.framework of macOS. Our work included handling of the memory management API, preparation of root file system via graph drivers, network configurations and much more without the strict dependency over the guest VM. This resulted in an implementation of docker which runs independently of it's the host kernel.

Nov 2018 - Aug 2020 **Research Intern**, *Remote*, Rochester Institute of Technology, USA.
Supervisor: Prof. Taejoong (Tijay) Chung

- we measure and analyse a huge dataset of all DANE-related objects in .com, .net, .org, and other domains. This collected spanning dataset is measured for misconfigured DANE records in TLDs using big data analysis. In the second part, we found out vulnerabilities/misconfigurations of "mail server" which make use of DANE. DANE has just begun to be deployed at some mail servers (e.g. Comcast) to check the validity of the sender. Just like other PKIs (e.g., TLS, DNSSEC, and so on), there are some servers that do not properly check the DANE certificate or intake busted signatures. The research identified vulnerabilities in DANE implementation and analyse DANE objects in TLDs.

Work Experience

Oct 2018 - Dec 2018 **Google Code-In** , *Organisation Administrator (Org Admin)*, KDE.

- Administrate and manage/lead the KDE community initiative for Google's Code-In (GCi) 2018 program for students aged 13-17. My primary responsibilities were to frame org participation, org selection criteria, and org-specific operating procedure and be the org's representative. Moreover, serving as communication liaison with Google and between the students and mentors as well. Further, I had to assure and maintain quality among the work done in and out of the community.

May 2018 - July 2018 **Google Summer of Code**, *Developer Intern*, GNU Project/ Wget2.

- Added support for DNS over HTTPS, a web protocol that argues for sending DNS requests and receiving DNS responses via HTTPS connections, hence providing query confidentiality and protection from various attack such as MITM, Eavesdropping, spoofing and much more.
- A new library to handle DNS resolution was introduced. Moreover, implemented and provided support for protocols like DNS Service Discovery(DNS-SD) and EDNS.

May 2017 - Aug 2017 **Google Summer of Code**, *Developer Intern*, KDE.

- Re-implemented the KNSCore (KDE API) protocol, making download and upload possible within the website share.krita.org. Krita is an application for creating digital art files from scratch.
- Improved support for creating/editing bundles, and revamped GUI for dialog window handling bundles.

Dec 2016 - Feb 2017 **KDE SoK'17**, *Developer Intern*, KDE.

- Collected and processed 110 Messier sky objects in KStars, KDE's amateur astronomy software.

Publication

Mixed Signals: Analyzing Software Attribution Challenges in the Android Ecosystem, Kaspar Hageman, Álvaro Feal, Julien Gamba, ***Aniketh Girish***, Jakob Bleier, Martina Lindorfer, Juan Tapiador, Narseo Vallina-Rodriguez, IEEE Transactions on Software Engineering 2023.

Challenges in inferring privacy properties of smart devices: Towards scalable multi-vantage point testing methods, ***Aniketh Girish***, Vijay Prakash, Serge Egelman, Joel Reardon, Juan Tapiador, Danny Yuxing Huang, Srdjan Matic, Narseo Vallina-Rodriguez, In Proceedings of CoNEXT '22, 2022..

A Longitudinal and Comprehensive Study of the DANE Ecosystem in Email, Hyeonmin Lee, ***Aniketh Girish***, Roland van Rijswijk-Deij, Taekyoung Kwon, Taejoong Chung, In Proceedings of the USENIX Security Symposium (Security'20), 2020..

Posters

Towards an extensible privacy analysis framework for Smart Homes, ***Aniketh Girish***, Juan Tapiador, Srdjan Matic, Narseo Vallina-Rodriguez, In Proceedings of the Internet Measurement Conference (IMC'22), 2022..

Awards and recognition

Jun 2022 **TMA PhD school. Best Poster Award**, *ImposTer: Towards an Extensible Privacy Analysis framework for Smart home ecosystem*.

Grants

Jun 2022 **TMA'22 student travel grant**.

International Experience

July 2018 - August 2018 **Summer Exchange Student**, *BGU international program of the Negev*, Ben-Gurion University, Israel.

- Selected as a Summer exchange student at Ben-Gurion university, Israel and was awarded a scholarship to attend a 1 month summer course on 'Data Mining and Business Intelligence for cyber Security' as well as sponsored travel expense within the country.

Open Source involvement

KDE, *Developer*.

Active member, contributor and developer with KDE, a global free software community that develops desktop applications and environments built on top of the Qt framework.

OpenStack, *Foundation member/ Contributor*.

Active member, contributor and developer with OpenStack, a software platform for cloud computing, mostly deployed as infrastructure-as-a-service, whereby virtual servers and other resources are made available to customers.

GNU / GNU Wget2, *Contributor*.

Active contributor at GNU. GNU is an operating system and an extensive collection of computer software. While, GNU Wget2 is a computer program that retrieves content from web servers.

Projects

- **Probe**, *Go*.
  - A high performant lightweight userspace Network stack over Go exhibiting full kernel bypass.
    Source Code: Yet to be released.
- **amfoss.in**, *Django*.
  - *Design:* Designed and revamped the UI/UX design of the website. Improved for better user interaction with mobile compatibility.
  - *Blog Aggregator:* Service that aggregates data using RSS feed of a blogger and represents the latest posts ordered on the website.
  - *Admin-Panel:* Core service for internal work-flow of the project to be maintained at an administrative level.
  - *Dashboard:* Applied Machine learning and Data mining methodologies to build Analytic environment and club member surveying tool. Standardized with python dependencies. Which helps mentors and students equally to run the club better by providing data which represents activities and progress.
    Live at: https://amfoss.in/
    Source Code: https://github.com/amfoss/fosswebsite
- **Object Tracking**, *OpenCV and C++*.
  - Developed (as a part of KDE Conference '17) a tracking program which creates a tracker object according to the user inputs and tracks a specific region in a given input/image per frame based on their colors as well as on contours according to the SVM models.
    Source Code: https://github.com/Aniketh01/Object-tracking-Using-OpenCV-and-Qt

Conferences / Hackathons

- **Akademy'19**, *Invited Speaker*, September 2019 | Università degli Studi di Milano-Bicocca, Milan, Italy.
- **Hackathon for Peace, Security and Justice**, *Participant*, November 2018 | The Hague, The Netherlands.
  - The project aims at helping the Internation criminal court(ICC) by providing a complete automated tool to analyse evidence of various crimes that needed to be handled by ICC. We developed an Exctractor API that processes the dataset and extract text from files. This API was designed to detect which sort of file type it is like PDF, DOC(X), TXT that was parsed. Further, the core idea behind the project was to extract entities and find relationships between them in the context of ICC. Various Machine Learning algorithms and techinques like LSTM , CNN to corelate the entites and used python modules like Spacy, nltk, keras. numpy and sklearn.
- **Vistara Hackathon**, *Participant*, October 2017 | Bangalore, India.
  - Developed a Web App that automates and personalizes air travel experience for the user with features such as best route and travel time to the airport, status and geolocation of the flight, real time push notifications.
  - Selected as an entry into the finals of the competition.
- **conf.KDE.in '17**, *Invited Speaker*, March 2017 | IIT Guwahati, Assam, India.

Workshops

May 2018 **Django web development workshop**.

- Conducted fifteen day workshop on HTML, CSS, JavaScript, Python and Django as part of the Road To Excellence program from CIR, Amrita School of Engineering.

Technical skills

- **Programming skills:** Proficient in C, C++, Java, Python.
- **FrameWorks:** Qt, Django, Bootstrap.
- **Platforms:** Windows, GNU/Linux.
- **Web:** HTML, CSS, JavaScript, JQuery.
- **Tools:** GIT, LATEX.

Articles

- **Setting up Apache and PHP on windows** , Open Source For You.

  Link: https://goo.gl/y7XQN7

- **Templates in C++ vs Generics in Java** , GeeksforGeeks.

  Link: http://www.geeksforgeeks.org/templates-in-c-vs-generics-in-java/

Volunteering activities

- **FOSS Club | Mentor and Member :** Current and an active member of the Free and Open Source Software(FOSS) club in Amrita Vishwa Vidyapeetham. Further, I actively involve in mentoring students to improving their skill-sets. To do so, I have conducted various sessions on open software and much more.

References

- **Narseo Vallina-Rodriguez** (narseo.vallina@imdea.org)
  Research Associate Professor, IMDEA Networks, Madrid.
- **Taejoong (Tijay) Chung** (tjc@cs.rit.edu)
  Assistant Professor of Computer Science, Virgina Tech, USA.
- **Hajime Tazaki** (tazaki@iij.ad.jp)
  Senior Researcher, Internet Initiative Japan - Innovation Institute(IIJ-II), Tokyo, Japan
- **Vipin Pavithran** (vipinp@am.amrita.edu)
  Assistant Professor of cybersecurity and networks, Amrita Vishwa Vidyapeetham, Kerala, India