The slides of this meeting are confidential and will not be shared. In case, to collaborate with the SPRITZ grades, sending CVs and exams grades/expected time commitment on projects, etc.

Just write to both Conti and all Teaching Assistants as always (put Conti in cc and use “Reply all”)

Each project will have three icons:

* Suitable for MSc Thesis (first symbol)
* Suitable for BSc Thesis
* Suitable for Course/Extra Projects

There are many chances of collaboration, starting from many people and different themes:

1) Federico Turrin (turrin@math.unipd.it)

* Cyber-Physical System Security
  + Anomaly Detection and Intrusion Detection Systems
  + Industrial Encrypted Traffic Analysis

2) Alessandro Brighente (alessandro.brighente@unipd.it)

* Jamming IOT Devices
  + End-to-end attack to 5G Networks
  + Identification of Polyglot Code
* Creating Rules for Secure Testing
  + Tracking users in Wi-Fi
  + Is Easy-Connect Really Secure?
* Drones and Autonomous Driving
  + Drones Startup Safety Check
  + Driving Behaviour Authentication
* Communication Analysis
  + Detection of Location Spoofing Attacks in Air-Traffic Communication: Leveraging Physical Layer and Space Tessellation

3) Tommaso Bianchi (tommaso.bianchi@phd.unipd.it)

* Cyber-Physical Systems security
  + Find exposed UPS Systems on the wild
* Cryptography
  + Break Quantum KD Signal Algorithm
* Vehicles Security
  + ECU Fingerprinting in a Black Box Reverse Engineer manner
  + Remote Keyless Attack and Defenses

4) Denis Donadel (donadel@math.unipd.it)

* Vehicles Security
  + Hyperloop cybersecurity
  + On the feasibility on DoS on vehicles
* Applied ML
  + PoC of an Intrusion Response System (IRS)
  + An LLM-based assistant for sysadmins
* MISC
  + Improving application fuzzing via QR Codes
  + Can we attack channel hopping mitigation against DoS?
* Arxiv-leaks
  + Retrieve redacted data and insight from Arxiv

5) Gabriele Orazi (gabriele.orazi@phd.unipd.it)

* EPZ (Endpoint Privacy Zones) Privacy
  + StravaGANte
* Acoustic communications to evade network security policies
* Document Un-redaction
  + Context Driven Un-redaction of documents

6) Jiaxin Li (jiaxin.li@studenti.unipd.it)

* Covert Channels
  + Solution for Covert Channel for Federated Learning Systems
* Membership Inference Attack (MIA)
  + Modeling the distribution of distinguishable metric for non-member data

7) Francesco Marchiori (francesco.marchiori@math.unipd.it)

* Automotive Security
  + Quantum-Safe Cryptography in Connected Vehicles
  + Authenticating ECUs through CAN bus physical signals
  + Resilience Testing for Connected Vehicles
  + Cyber Threat Intelligence on Automotive
* Cyber Threat Intelligence and NLP (Natural Language Processing)
  + Advanced Persistent Threat (APT) classification
* Adversarial Attacks
  + Attacks on License Plate Recognition Systems

8) Luca Pajola

* Machine-Learning for Security
  + Design on Novel Adversarial Attacks
  + Web Analyses & Attacks
* Creating profiles from audio clips
* NFT Playground

9) Alessandro Lotto (alessandro.lotto@phd.unipd.it)

* 5G and 6G Networks
  + Location Tracking Defenses
  + Authentication in Roaming
* Authentication
  + Physical Layer Device Authentication
  + Behavioral touch-based authentication

10) Saverio Cavasin (saverio.cavasin@phd.unipd.it)

* Deep Fake
  + 1 Shot attack
  + Camaleonet
  + Generative blackmail attack
* Biometrics
  + IDAP (Identity Dialer Acquisition Protocol)
  + Tattoo Identification

11) Giulio Rigoni

* Drones/UAVs
  + FPV Data persistency/authenticity
  + Multilateration vs GPS spoofing

12) Eleonora Losiouk

* Android Security
  + Solving the Android Semantic gap
  + Measurements of Interaction among Android apps

13) Rahul Saha

* Distributed Ledger Technology
* Security analysis of Signal Protocol
* Blockchain Encrypted Protocol

14) Stefanos Koffas

* Adversarial ML
  + Explore the behavior of ChatGPT like a terminal
  + Implement dynamic backdoor attacks in computer vision

15) Harsha Vasudev

* Vehicular Networks Security
  + Secure Protocol for IOV Communication Components
  + PQC-based Protocols for IOVs/VANETs
* CAN Bus Security
  + PQC and PUF Integrated Methods for CAN

16) Giacomo Quadrio (giacomo.quadrio@unipd.it)

* Anomaly detection on IoT networks
  + Creation of a network traffic dataset based on real IOT hardware
  + Survey on most frequent IoT attacks

17) Alessandro Galeazzi (alessandro.galeazzi@unipd.it)

* Cybersecurity and social networks
  + Opinion inference on social media
  + Coordinated behavior in online debates

18) Shuo Wang (shuo.wang@phd.unipd.it)

* Jamming Tool Development

19) Enrico Bassetti (bassetti@di.uniroma1.it)

* IP Security
  + Security of custom IP stacks
  + Multi-path TCP and MP-QUIC
* More IP an E2EE
  + IP retransmissions and accounting
  + E2EE contact verification ceremonies

20) Vinod Puthuvath

* Malware detection
  + Malware visualization
* Threat Intelligence Sharing
  + Large Language Models (LLMs) to revolutionize the way Cyber Threat Intelligence is gathered, analyzed, shared

If the project is not part of these ideas, it depends on the nature of the idea itself and we con contact other collaborators and stuff (given this is the future of the research, the slides will not be shared).

To create the essay on:

* send an email to Conti and assistants to CC
* tell the idea and the project/topic
* they give us a feedback on this (approving/rejecting)
* create an essay of a few pages

The deadline for the project is at least 24 hours before the exam date. It all depends on us.