ELE101-1 Introduction

Murat Sever
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Outline

Getting started

Survey

About Me

Curriculum

Schedule

Motivations

Tech. Part

Getting Started Survey

- No personal information is collected
- Think before answering
- Help us prepare better course content

About me

BSc, METU, 1998

MSc, AYBU, 2015

PhD, TOBB ETU, …

Certificates

Certified Instructor and University Ambassador at NVIDIA

GitHub Teacher

Work Experience

- ASELSAN
  - Türkiye’s leading defence company
  - Aselsan 47. Rank in “Defense News' Top 100 list”
  - ~15 years
  - March ‘23

aselsan

Türk Silahlı Kuvvetlerini Güçlendirme Vakfı'nın bir Kuruluşudur.

About Me

- 25 years in software development
- 15+ years in telecom field
- PhD thesis student @ TOBB ETÜ
- Lecturer @ TOBB ETÜ
- ELE361L (Telecom Lab)
  - 2021-2022 Summer
  - ...
  - 2025-2026 Fall ELE361L - marks the 7th time
- ELE468 Software Defined Radio (SDR)
- ELE476 Applied Digital Signal Processing
- ELE495 Senior Project

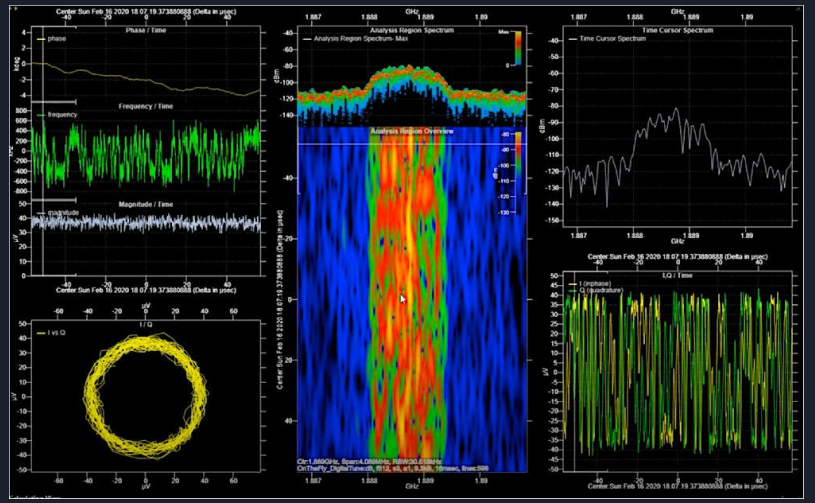
Embedded Experience - Monitoring Receivers

TI 8-core DSP/SysBIOS

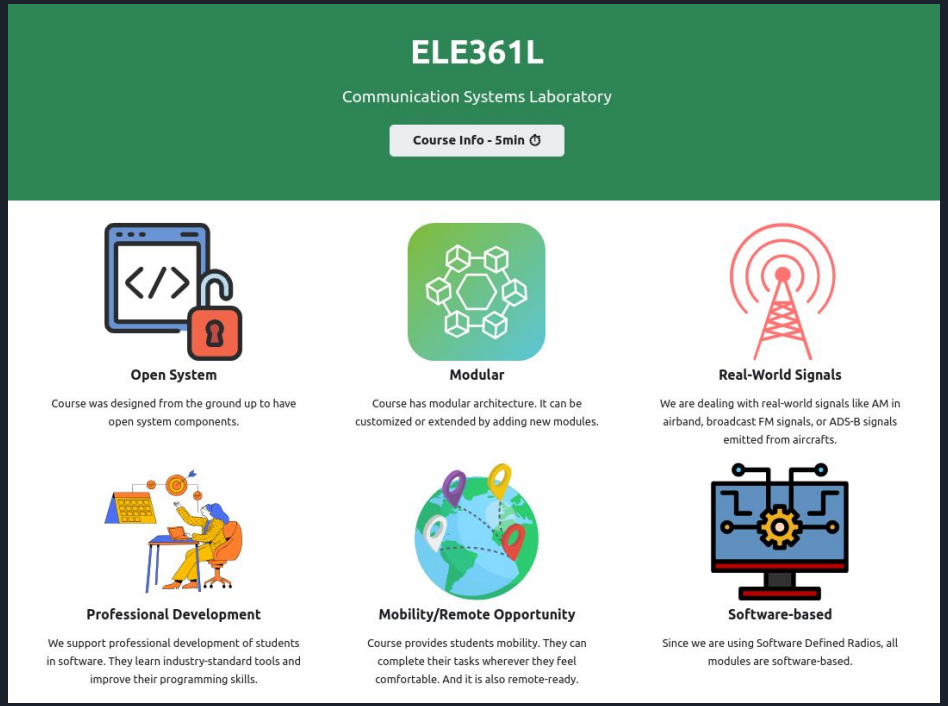
Intel i7/VxWorks

SIGINT: Signal Analysis Project

- Offline/Online Analysis
- Demodulation/Decoding
- Parameters
  - Center Freq
  - Modulation Type
  - Baud Rate



ELE361L



https://ele361l.github.io/

Awards: 9. Başakşehir Innovation Contest

BASAKSEHIR
LIVING
LAB
ISTANBUL

Awards: 3. AOSB R&D and Innovation Contest

Events: SDR Academy Friedrichshafen, Germany

Events: GNU Radio Conference 2023

GRCon23
TEMPE, ARIZONA

5-9 September 2023

Talk & Workshop

Events: GNU Radio Conference 2025

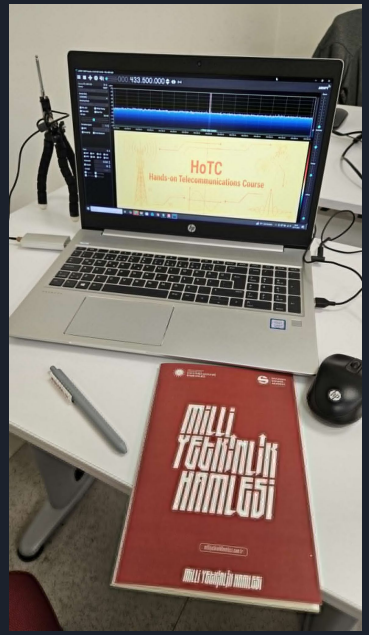
8-12 September 2025

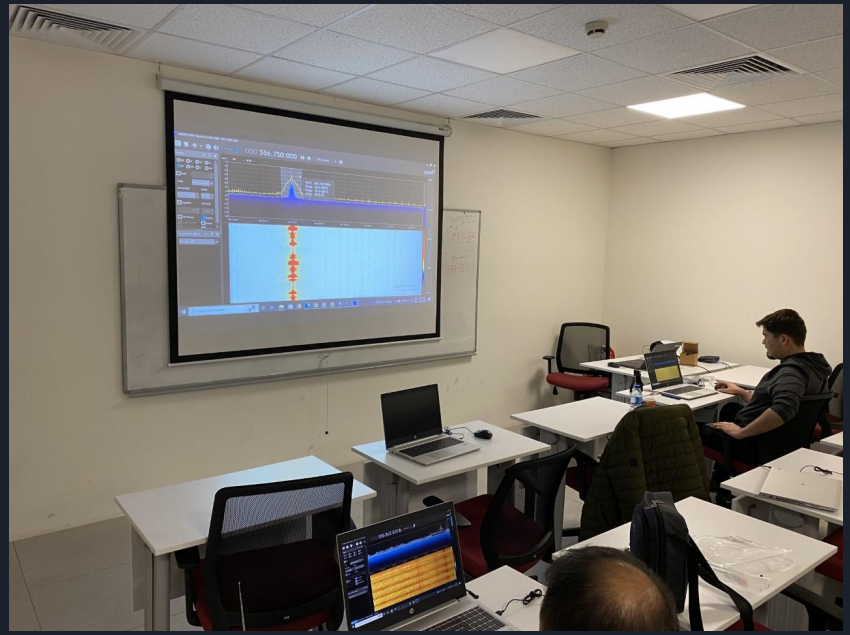
Workshop: Simple Replay Attack Demo with GNU Radio

SSA: RF School Coordinator

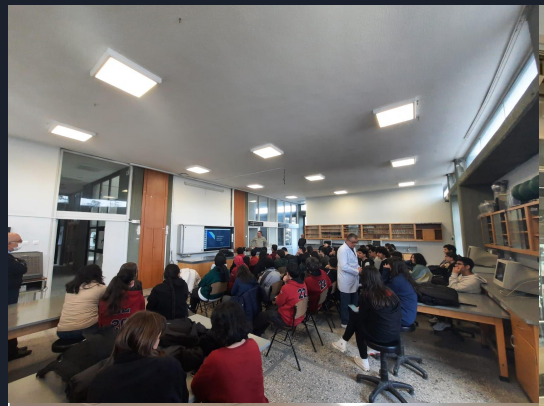
SAVUNMA SANAYİİ AKADEMİ

RF OKULU





Reachout Project



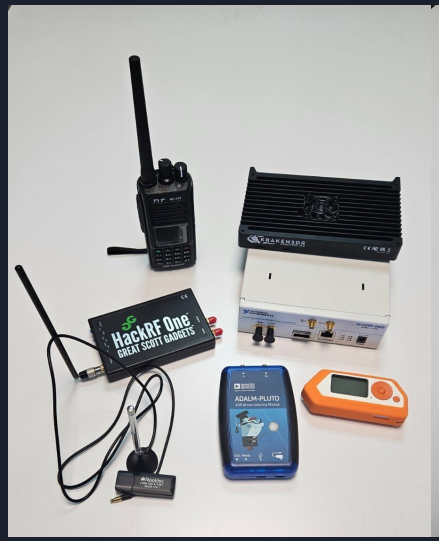
Linux Camps

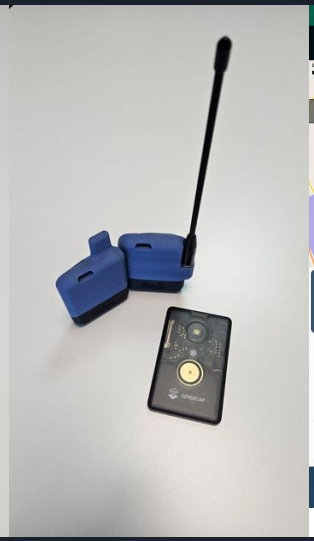
- Winter
  - Eskişehir/Afyonkarahisar
- Summer
  - Bolu
- All FREE

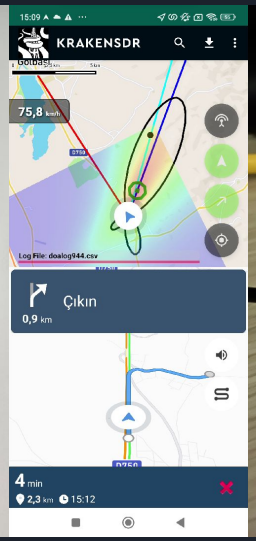
- Ağ Yönetimine Giriş
- Blokzincir'e Giriş ve Ethereum ile Akıllı Sözleşmeler
- C ve Assembly Programlama ile Linux Çekirdeğine Bir Bakış
- GNU/Linux Sistem Yönetimi 1. Düzey
- GNU/Linux Sistem Yönetimi 2. Düzey
- Linux İç Yapısı: (e)BPF'e Giriş
- PHP & Laravel & Vue.js ile Yapay Zeka Destekli Yazılım Geliştirme
- Python ile Programlamaya Giriş
- Python ile Yapay Zeka
- Sayısal Kriptografi ve TersKod Mühendisliğine Giriş

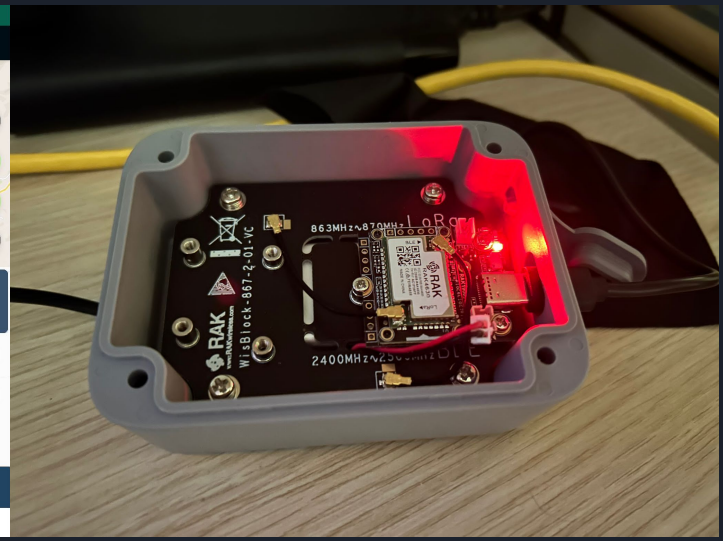
My Research Items

- https://ele361l.github.io/blog









More on LinkedIn

- I am on LinkedIn
- Get connected to hear more from me!

Office/Make-up Hours

- Office
  - Tuesday 15:00-16:30
  - Thursday 10:30-12:00
- Make-up
  - Saturday or Sunday?
  - Morning or Afternoon?

Skills

- Technical Skills
- Soft Skills

Technical Skills

- Programming and Software Proficiency:
  - Familiarity with programming languages (e.g., Python, C/C++, MATLAB) and industry-specific software (e.g., AutoCAD, SolidWorks, ANSYS).
- Mathematics and Data Analysis:
  - Proficiency in calculus, linear algebra, and statistical analysis to model systems and interpret data.
- Design and CAD (Computer-Aided Design):
  - Skills in creating and modifying 2D and 3D models for prototypes, simulations, and manufacturing processes.
- Project Management and Planning:
  - Competence in using tools like Microsoft Project or Primavera for managing timelines, resources, and budgets in engineering projects.
- Electrical System Knowledge:
  - Understanding of electrical components, circuits, and systems for interdisciplinary projects.
- Testing and Quality Assurance:
  - Ability to design, execute, and interpret tests to ensure that products meet safety, functionality, and reliability standards.

Soft Skills

- Soft Skills
  - Critical Thinking
  - Teamwork
  - Leadership
  - Being Positive
  - Problem Solving
  - Communication
  - Awareness

Savunma Sanayi Akademi
7 Temel Sosyal Yetkinlik

https://ssa.gov.tr/katalog/?id=5#book1/2

Content

1. Giriş ve Bölüm Hocalarının ve Program Sürecinin Tanıtımı (4 Saat – 2 hafta)
2. Mühendislik Tasarımı ve Mühendislik Etiği (4 Saat – 2 hafta)
3. Yazılı ve Sözlü Sunum Teknikleri (4 saat – 2 hafta)
4. Girişimcilik (2 saat – 1 hafta)
5. Python Dersleri (6 saat – 3 hafta)
6. Elektronik Mühendisliği Alt Alanlarından Sunumlar (4 saat – 2 hafta)

Schedule

1. GitHub
2. MarkDown
3. CLI: Command Prompt/Bash Prompt
4. Linux
5. git
6. conda
7. JupyterLab
8. Python
    a. Basics
    b. numpy, matplotlib
    c. hexadecimal, dB Calculation, complex numbers
9. ssh
10. docker

Assessment

Attendance % 10
MidTerm (1) % 45
Assignments (5±1) % 45

Key Points to Remember

Some important points about the course

- Always bring your laptop to class
- Every user must have an account on **GitHub**
- Make installments required for the course into your laptop ASAP
- Check your TOBB ETU e-mail for any updates!
- Do not forget to sign in the attendance list!
- Common time for compensation?

Success Strategies

- Make time
- Assignments and Deadlines
- Understand the technology
- Do Your Work yourself
- Save Your Work!
- Start Early

Motivations

- The Missing Semester of Your “EE” Education
- Engagement
- Professional Development

The Missing Semester of Your “EE” Education

- Advanced EE Topics
  - Circuit Theory
  - Electronics
  - Electromagnetics
  - Control Systems
  - Communication Systems
- But, wait! What about the tools?
  - Version Control System - Git
  - Command Shell or terminal - Cmd or Bash
  - Python
  - Remote Machines - serial, ssh
  - Virtual machines or containers

The Missing Semester of Your CS Education

How to use GitHub?

Web interface

https://github.com/

Create an account if not yet!

Do not forget your account info!

Markdown Format

- https://docs.github.com/en/get-started/writing-on-github/getting-started-with-writing-and-formatting-on-github/basic-writing-and-formatting-syntax

Create your repo

- Add README
- Add a photo
- Download as zip
- Clone

Thanks!

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