Project Portfolio & Internship Snapshot – Buğra Çetinkaya

1. JCL Job Simulator
Python
Simulates a mainframe-style job execution workflow inspired by Job Control Language (JCL).

- Supports step-based execution, error handling (retry/skip), and shared memory context
- Features CLI and web UI (Flask), with future support for dependency graphs
  Focus: Systems logic, workflow orchestration, fault tolerance

2. JCL Parser
Python
A syntactic validator and interpreter for simplified JCL scripts.

- Converts custom script lines into parsed tokens
- Acts as a backbone for the job simulator
  Focus: Language parsing, input validation, rule-based interpreters

3. COBOL Calculator

COBOL
Basic four-function calculator (add, subtract, multiply, divide) built using COBOL.

- CLI-based I/O for arithmetic operations
  Focus: Mainframe basics, legacy language syntax, numeric logic

4. Data Structures

C
Personal library of custom data structures implemented from scratch:

- Includes linked lists, stacks, queues, binary trees, and hash maps
- All structures are tested with example use-cases
  Focus: Memory management, pointer logic, modular architecture

5. Brute Force Simulator

C + Python (Hybrid)
A brute-force password cracker using dictionary and character permutations.

- Written in C for performance; integrated with Python for analytics
  Focus: Low-level algorithm design, timing optimization, string operations

6. Mini-DB

C
A file-based database engine supporting CRUD operations.

- Simple command-based interface with record serialization
  Focus: File I/O, binary data storage, data indexing

7. Stock Analyzer

Python
Downloads historical stock data and performs technical analysis.

- Calculates moving averages, volatility indicators
- Plots graphs using matplotlib
  Focus: Data scraping, financial modeling, data visualization

8. Mini-Notepad

C
A basic text editor for terminal use.

- Supports open, edit, and save operations
- Built without external libraries
  Focus: Buffer management, character streams, UI simulation in terminal

9. CLI Sorting Visualizer

C
Visualizes classic sorting algorithms (bubble, quick, insertion) in terminal.

- Uses delay and ASCII art to represent steps
  Focus: Educational tools, algorithm visualization

10. Face Recognition

Python (OpenCV)
Basic face detection system using Haar cascades.

- Real-time camera input
- Faces highlighted with bounding boxes
  Focus: Computer vision fundamentals, OpenCV usage

11. Social Media App for University (Ongoing)

An exclusive platform for METU NCC students built with **Flutter** and **Firebase** (planned migration to custom backend). Features include post creation, likes, comments, push notifications, friend system, real-time chat, and an admin panel with role-based access control.

Current Internship – VBT Software

Position: IT Intern
Location: Istanbul, Turkey
Duration: 16 June 2025 – 28 July 2025

Currently completing a summer internship at **VBT Software**, a company specialized in enterprise solutions, mainframe systems, and custom software development.
My responsibilities and focus areas include:

- **Backend development with C# and .NET Core**
- Relational data modeling using **MS SQL Server**
- Building mobile UI components with **Flutter**
- Participating in **Agile** processes: daily stand-ups, sprint planning
- Using tools like **GitHub Copilot**, **Figma**, **RabbitMQ**, and **Redis**
- Exposure to mainframe technologies and enterprise-scale systems

Focus: Full-stack development, team collaboration, production-level coding

This internship has enhanced my understanding of both frontend and backend technologies in real-world enterprise-level systems.

For full repositories and updates, visit: **github.com/bugractnky**

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