



Datalogic MECOP CpE Internship

***EUGENE, OR
SPRING 2023 - FALL 2023***

Astrid Delestine

Introduction

Oregon State University

Major

Electrical Computer Engineering

Minor

Computer Science

Focus

Micro-electronics/Robotics

Standing

Senior (150 credits)

Datalogic

Job Title

R&D Intern

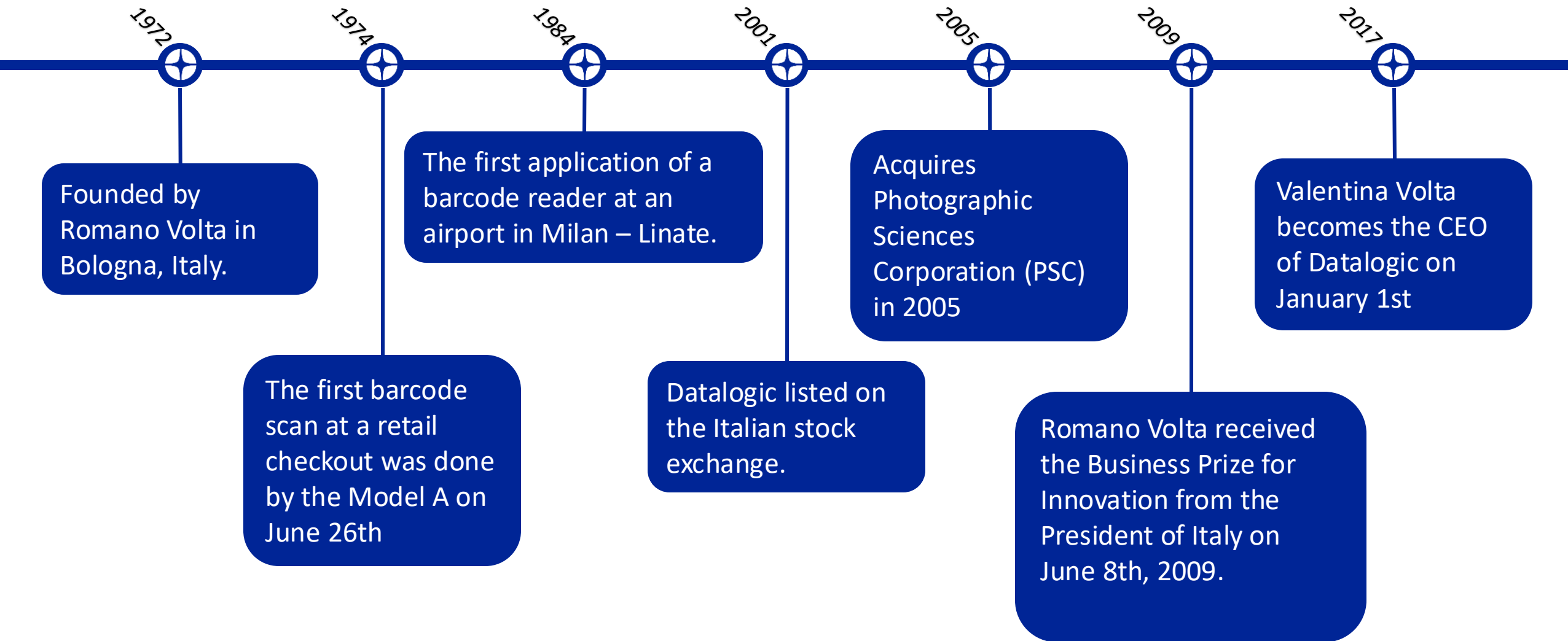
Primary Role

Algorithms and New Technologies
Researcher

Experience

First Internship

Company History

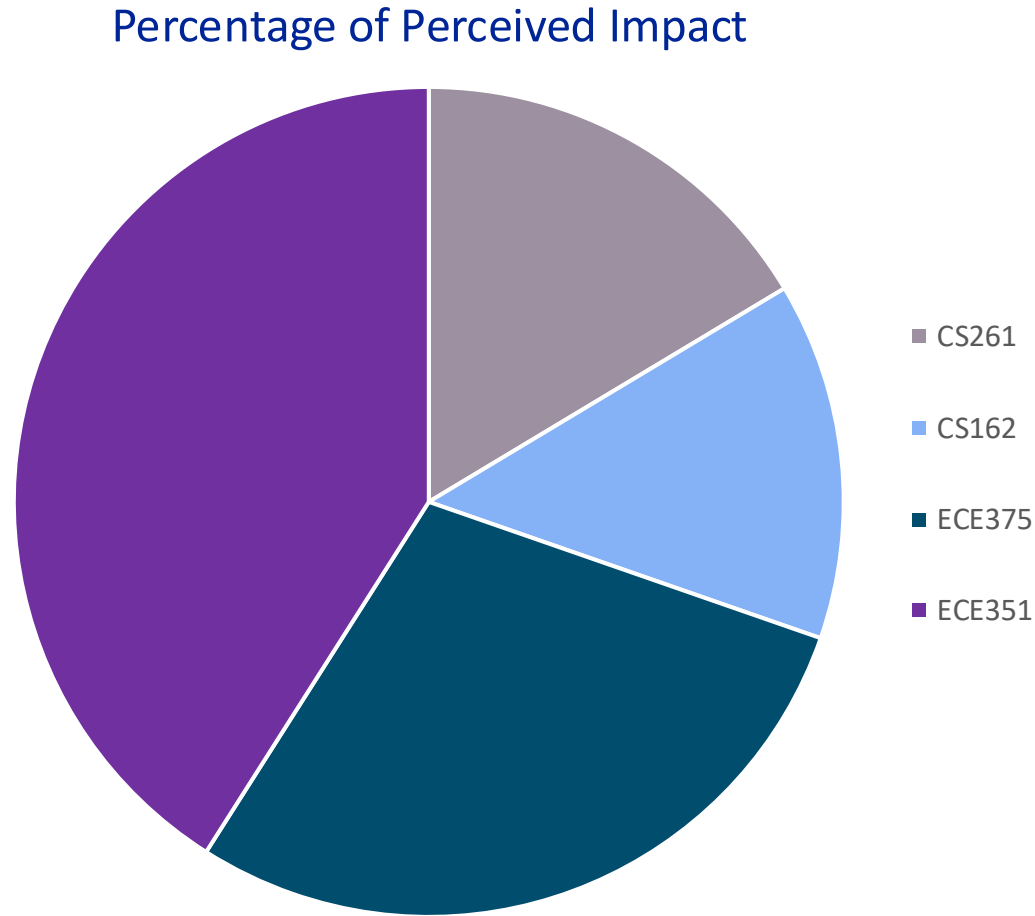


Working at Datalogic

- Hours: 40/week
- Wages: Above min MECOP set, \$\$, \$23/hr
- Benefits:
 - Holiday time off, Sick time, No Vacation time, 401k Match up to 6%
 - \$1.50 lunch
- Overtime
 - Time and a half for time over 40hrs per week with confirmation from manager.
- Scheduling
 - Very flexible just make sure to communicate
- Hybrid Schedule

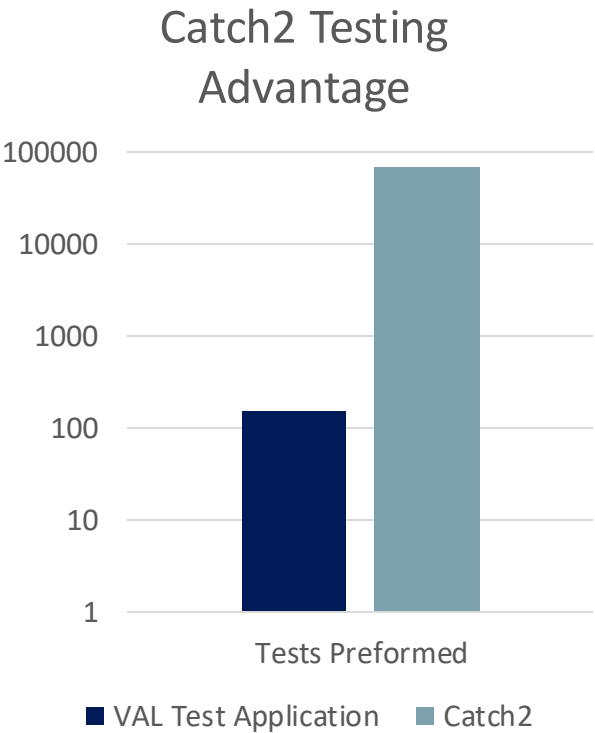
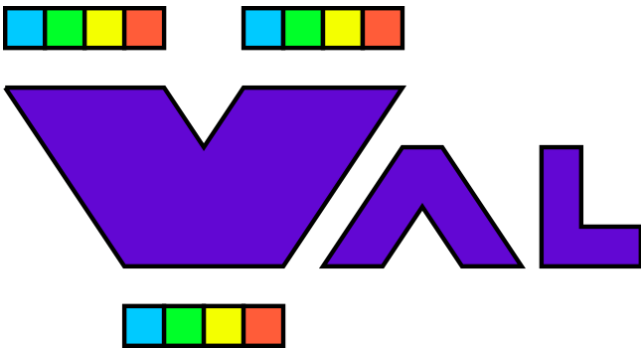
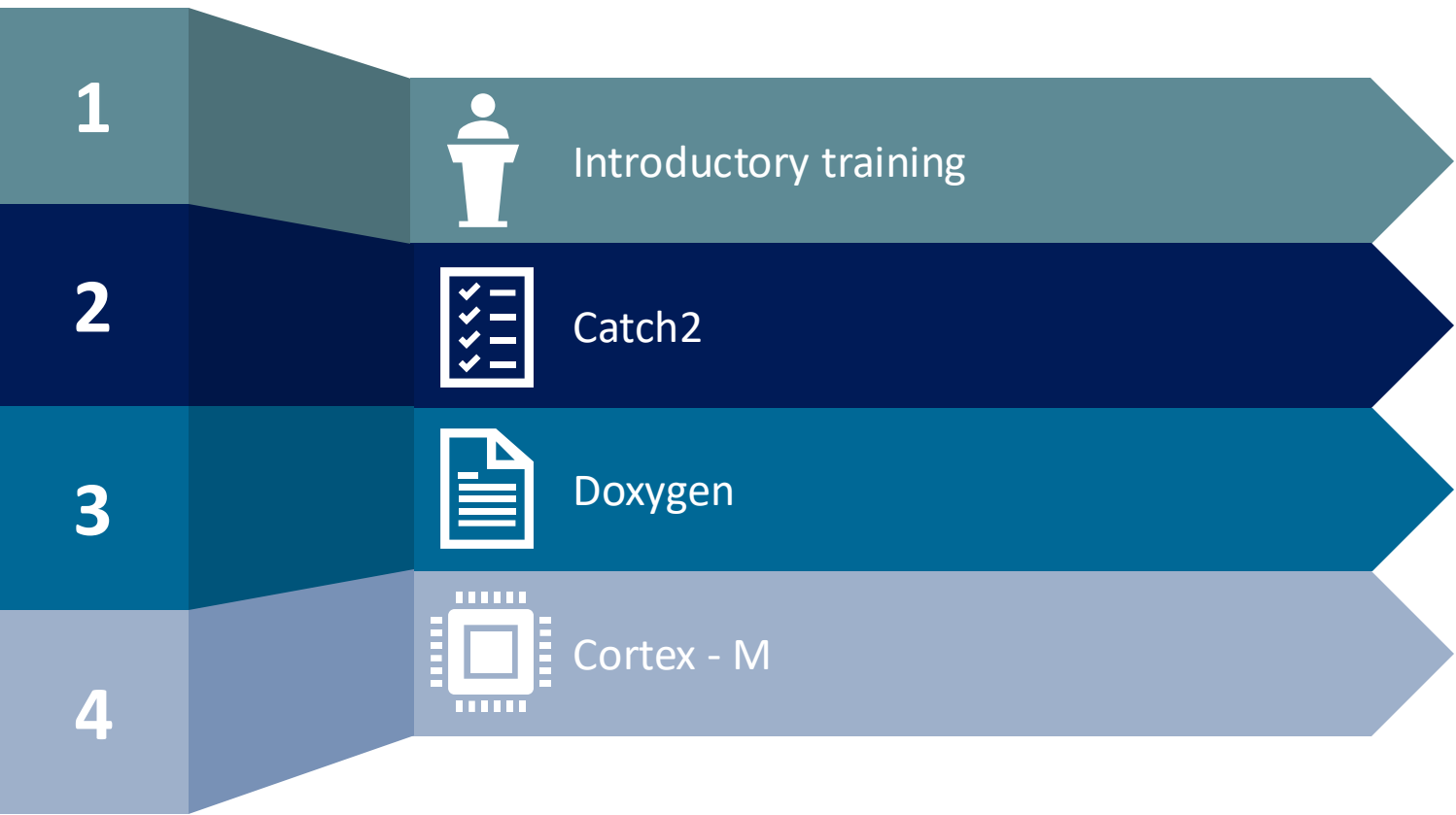


Key Courses



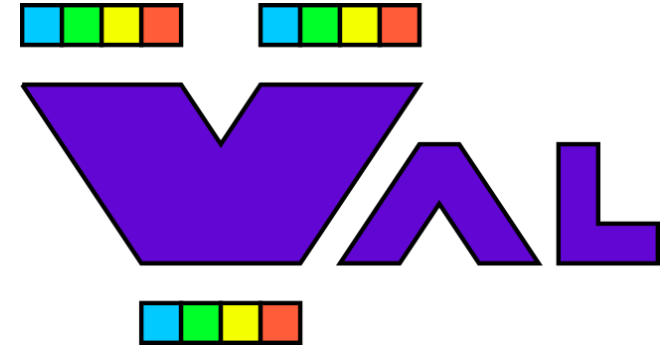
- Data Structures (CS261), Introduction to Computer Science II (CS 162)
 - Prolific use of C and C++
- Computer Organization and Assembly Language Programming (ECE375)
 - Due to assembly use and register knowledge
- Signals and Systems I (ECE351)
 - Due to the nature of how image processing works

Projects

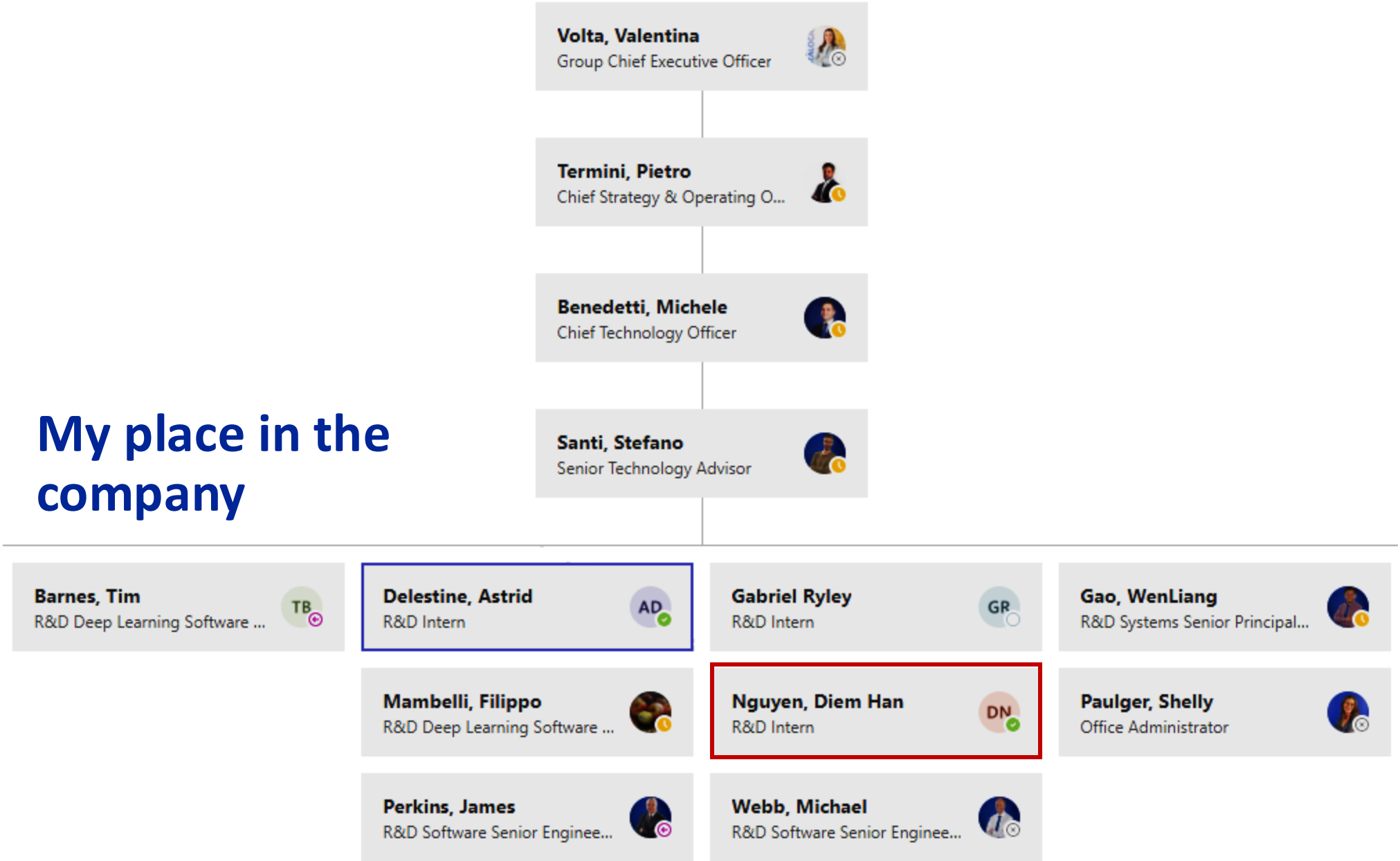


Contributions to VAL

- Documentation
 - Setup VAL for WSL2
 - How to use GDB for Visual Studio Code
 - How to use Scripts for Visual Studio Code
 - Setup for Cortex M on Windows Via Virtual Box
 - Setup for Cortex M on Windows (Native)
- Catch2 Tags
 - Proprietary Feature 1-10
 - Proprietary Memory Checker 1-10
 - Proprietary Benchmark 1-10
 - Fast
 - Slow
- Minor fixes to Proprietary Features



My place in the company

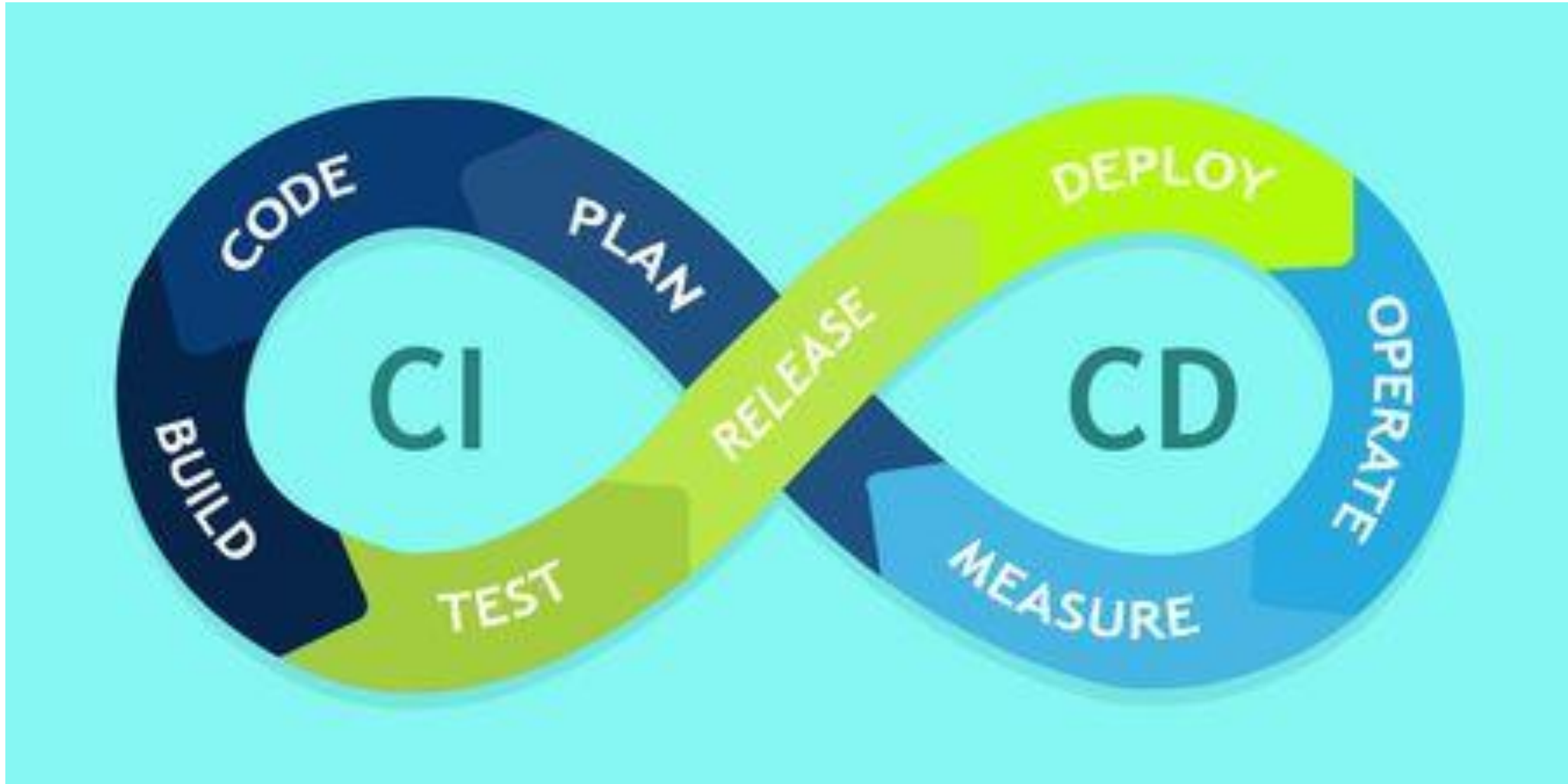




Key Knowledge Gained

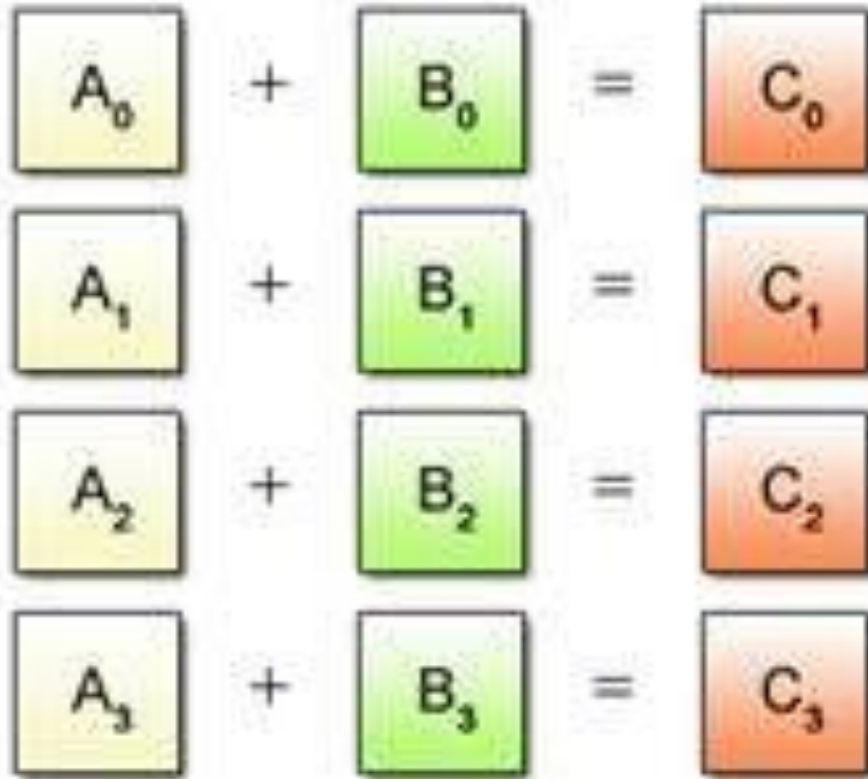
**Gitlab CI/CD, SIMD, Arm Intrinsics.
Doxygen, Cmake, Catch2.**

CICD

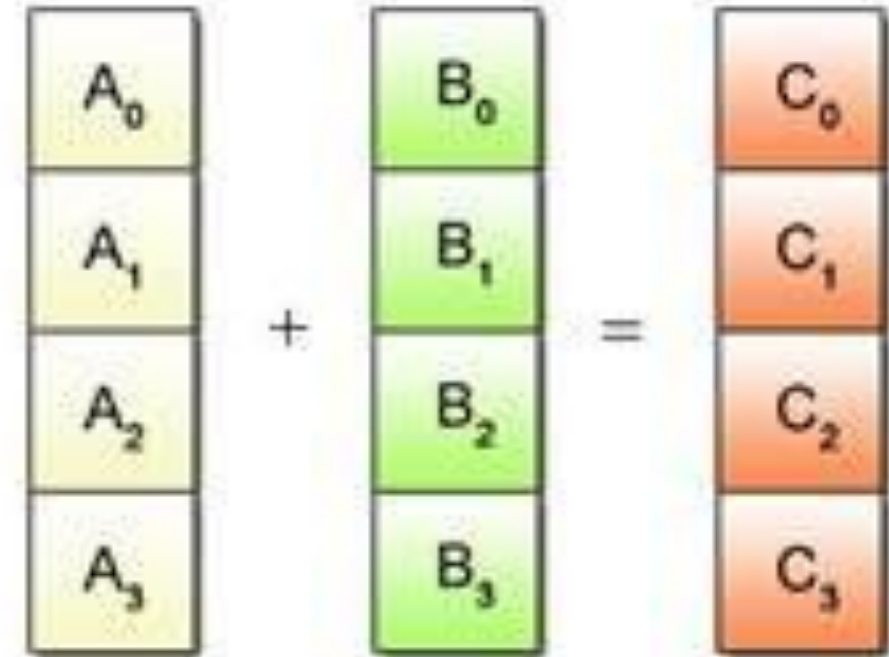


SIMD Operations & Processor Intrinsics

(a) Scalar Operation



(b) SIMD Operation



Catch2 and Cmake



Main PageNamespacesClassesFiles

Class ListClass IndexClass HierarchyClass Members

libsocketselectset

Search

libsocket::selectset Class Reference

Public Member Functions | Private Attributes | List of all members

Collaboration diagram for libsocket::selectset:

```
graph TD; libsocket_selectset[libsocket::selectset] -.->|sfd| int[int]; libsocket_selectset -.->|elements| libsocket_socket[libsocket::socket]; libsocket_selectset -.->|elements| std_vector_int[std::vector<int>]; libsocket_selectset -.->|fdsockmap| std_map_int_socket[std::map<int, socket*>]; libsocket_selectset -.->|filedescriptors| std_vector_int; libsocket_selectset -.->|set_up| bool[bool]; libsocket_selectset -.->|readset| fd_set[fd_set]; libsocket_selectset -.->|writeset| fd_set; libsocket_socket -.->|keys| int; libsocket_socket -.->|elements| std_vector_int;
```

[legend]

Public Member Functions

void

add_fd (**socket** &sock, int method)

std::pair< std::vector< **socket** * >

, std::vector< **socket** * > >

wait (long long microsecs=0)

Private Attributes

std::vector< int >

filedescriptors

std::map< int, **socket** * >

fdsockmap

bool

set_up

fd_set

readset

fd_set

writeset

The documentation for this class was generated from the following files:

General Impressions

THANK YOU

An abstract graphic in the top right corner of the slide. It consists of a complex network of thin, light blue lines connecting numerous small, semi-transparent blue circular nodes. The nodes are scattered across the upper right portion of the slide, creating a web-like or molecular structure that suggests connectivity and technology.

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