

## 6 GLOSSARY

**Automatic Storage and Retrieval System (ASRS):** An automated storage and retrieval system consists of a variety of computer-controlled systems for automatically placing and retrieving loads from defined storage locations.

**Computer numerical control (CNC):** It is a computerized manufacturing process in which pre-programmed software and code controls the movement of production equipment.

**Pulse Width Modulation (PWM):** A method of controlling the average power delivered by an electrical signal.

**Flexible Manufacturing System (FMS):** A manufacturing system in which there is some amount of flexibility that allows the system to react in case of changes, whether predicted or unpredicted.

**Proportional-Integral-Derivative (PID):** A control loop feedback mechanism widely used in industrial control systems and other applications requiring continuously modulated control.

**Programmable Logic Controller (PLC):** A small, modular solid-state computer with customized instructions for performing a particular task.

**Selective Compliance Assembly Robot Arm (SCARA):** A robot's ability to move freely and maintain stiffness in three axes while being compliant in the final axis.

**Central Processing Unit (CPU):** Its electronic circuitry executes instructions of a computer program, such as arithmetic, logic, controlling, and input/output operations.

**Light Emitting Diode (LED):** A semiconductor device that emits light when current flows through it.

## 7 REFERENCES

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## 8 APPENDIX

### A. ASRS Budgeting

Description of Item	Qty	Unit Price	Total Amount
Linear Rail HGR15	310	4.000	1.240.000,00
Linear Guide HGH15CA	4	100.000	400.000,00
Plywood ( 12mm )	3	41.000	123.000,00
Shaft Stainless Steel 304 dia. 8mm	132	600	79.200,00
Timing Belt ( 2GT, lebar 6mm )	10	6.500	65.000,00
Pillow Block ( 8mm )	8	13.000	104.000,00
Flexible Coupling ( 5mm to 8mm )	2	14.500	29.000,00
Timing Pulley ( 2GT, 8mm )	4	28.000	112.000,00
Stepper Motor NEMA17, 17HS4401	3	95.000	285.000,00
Motor Bracket ( NEMA17 )	3	10.500	31.500,00
Aluminium Profile 30x30	1.263	1.094	1.381.722,00
CNC Shield Arduino Uno + 4pcs Driver Stepper motor A4988	1	61.500	61.500,00
Lead Screw 8mm, with nut T8	1	100.000	100.000,00
Pneumatic Gripper	1	173.767	173.767,00
Timing Pulley ( 2GT, 5mm )	2	22.000	44.000,00
Limit Switch	3	3.000	9.000,00
Pillow Block ( 5mm )	2	8.000	16.000,00
Total			4.254.689



# CHRISTOPHER EVAN

## PERSONAL DATA

Indonesian  
Nationality

Jakarta, Indonesia  
Place of birth

December 22, 2001  
Date of birth

## CONTACT

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Address

(62+) 82268985656  
Phone Number

christopher.evan.tan@gmail.com  
E-mail Address

## COMPUTER KNOWLEDGE

Computer Skills (Word, Excel, PowerPoint,  
Draw.io)

SolidWorks

Fluidsim

Python

Arduino

CX-Programmer

## LANGUAGE SKILLS

Indonesian - native language

English - fluent and used daily

German - basic knowledge A2.1

## COLLEGE DEGREE

### **Mechatronics**

Swiss German University Indonesia - 2019 to  
2023

### **Engineering**

Fachhochschule Südwestfalen - 2022

## EDUCATION

### **Completed degree in social sciences**

SMAK 5 BPK PENABUR Christian High School  
Indonesia - 2016 to 2019

## PRACTICAL EXPERIENCE

### **Internship at Parama Lentum Artindo (plastic molding company)**

(Indonesia) May 2021 to July 2021

- Project management
- Maintenance and asset management
- Project planning and calculation
- Production line and assembly

### **Internship at Gottshalk Unformtechnik GmbH (metal production company)**

(Germany) March 2022 to July 2022

- Production machine operator
- Maintenance and asset management
- Quality control
- Production line and packaging

## ORGANIZATIONAL EXPERIENCE

### **Head of communication for the mechatronics department**

2020 to 2021

### **Orientation week 2021 mentor**

August 2021

### **Vice-founder of the organization SGU Model United Nation**

Since 2019

### **Administrator of the SGU eSports organization**

2020 to 2021

### **Volunteer crew for a university event**

2019

## ACHIEVEMENT

### **Awarded for the highest geography score in the National Exam**

2019