# Willem Van Dam

**Mechatronics Engineering Student**

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## EDUCATION

University of British Columbia                                          September 2018 - May 2023
**3rd Year Mechanical Engineering, Mechatronics**

## TECHNICAL SKILLS

**Rapid Prototyping**
- 3D Printing (Prusa, Ender)
- CAD design & Prototyping
- Soldering & Machining (½ mm pitch, Mill, Lathe, CNC)

**Programming**
- VHDL, Assembly
- Bash, C, C#
- Python, MATLAB
- HTML, CSS

**Other**
- Linux, Mac, Windows
- Arduino, Teensy
- Altium, SolidWorks, Autodesk
- ModelSim, Excel, Unity

## WORK EXPERIENCE

**Cadex Electronics,** Vancouver, BC                                          June 2020 – January 2021
*Mechatronics Engineer*
- Developed transient temperature measurement algorithms, a calculator tool, and a research report to model the thermal properties of electronic enclosures using Excel and analytical experiments
- Designed a testing apparatus for measuring custom battery analyzer temperatures by designing PCB assemblies and enclosures using Altium and SolidWorks

**Motorola Avigilon,** Vancouver, BC                                          June 2021 – August 2021
*Assembly Technician and Manufacturing Supervisor*
- Assembled, tested, and repaired over nine models of thermal infrared security cameras
- Supervised and organized a team of eight workers to efficiently assemble over 250 security cameras a day

## UBC ENGINEERING STUDENT TEAMS

**UBC Thunderbots -** *Mechanical Co-Lead and Electrical Member*          September 2018 – Present
- Lead the redesign of six autonomous soccer playing robots placing 1st worldwide at the 2019 Robocup
- Manage a 15 member mechanical sub-team to design, review, and manufacture the robots using SolidWorks
- Designed an optimized solenoid chipper/kicker mechanism reducing space by 40% using Onshape and MATLAB
- Selected components and designed a power PCB with buck regulators to supply the robot with 3 voltage levels

**UBC Rapid -** *Co-Captain*                                          September 2018 – Present
- Founded and running a 3D prototyping consulting service to raise funds for research projects by designing, prototyping and printing requests from community members and research groups on campus.
- Manage a team of 20+ students to build 3D printers and mentoring multiple 3D printing research projects
- Leading a team-wide printer development project to create a unique portable, foldable 3D printer that can be used by students and field engineers alike

## TECHNICAL PROJECTS (more on personal website)

**Portable Game Console** – Designing a custom handheld gaming device using a Teensy 4.1, a touch TFT screen, and hardware components. Graphics are serialized via SPI to the screen with an SD card.
**3D Printed RC Tank** – Made a fully 3D printed gear box with a BLDC motor for an RC tank
**Drone Chassis** – Designed and 3D printed chassis for balance and strength using Fusion 360
**Piano-Playing Robot** – Designed a linear motion converter for a piano-playing robot using CAD and 3D printing
**Personal Server** – Built on Ubuntu Server with a LAMP stack, completely open source, set up with Nextcloud and automated using bash scripts
**AR Shopping Experience Application** – Developed an app in Unity to preview BestBuy products in your home using AR