

- Add Embedded Firmware Engineer as well on top (Microfabrication & Process Engineer | Semiconductor Device Integration | Embedded Systems for Characterization)
- Try incorporating Bridging MEMS fabrication and embedded systems to accelerate sensor deployment in IoT environments.” in about me section
- About ME

I am a microfabrication engineer passionate about developing and optimizing semiconductor and thin-film processes across diverse applications — from sensors and MEMS to integrated circuits and advanced packaging.

My experience spans wafer-level fabrication (oxidation, lithography, etching, deposition, bonding) and system-level integration, giving me a complete view of how device-level performance connects to real-world implementation.

Through hands-on work in cleanroom environments and embedded data-acquisition projects, I've built a strong foundation in both **process development** and **device integration**. My long-term goal is to contribute to the advancement of microfabrication technologies that drive the next generation of electronics and sensing systems.

- **Relevant Coursework:**
  - Microfabrication of Semiconductor Devices
  - Microfabrication Lab
  - MEMS: Design and Fabrication
  - Biosensors and Microsystems - Ye hata de
- [Embedded C/MicroPython \( Keep only Micropython\)](#)
- [Wireless Telemetry \( Remove this\)](#)
- [\(Ø1.3" assembly\) \(Remove this\)](#)
- [or RTC - Remove this in smart helmet project](#)



## **Automated Irrigation System Using IoT**

Bachelor's Thesis Project

Designed and implemented a smart irrigation system using soil moisture sensors and IoT technology. The system automatically controls water flow based on real-time soil conditions, optimizing water usage and improving crop yield. Integrated cloud-based monitoring for remote farm management.

[ESP32Soil Moisture SensorsIoTCloud IntegrationPython](#)

### **Key Contributions:**

- Developed sensor interfacing and data acquisition firmware for ESP32 microcontroller

- Implemented cloud-based dashboard for real-time monitoring and control
- Optimized power consumption through sleep mode programming
- Conducted field testing and calibration for various soil types
- This shouldn't be there. Maine ye nahi kiya hai

### - change this

- In water quality monitoring system, it should be C and not C++ in skills
- Add download button
- Should we add roles we are targeting? Because I have experience in 2 fields that are completely different

### Cleanroom Equipment to Include in Your Portfolio

## Photolithography & Patterning

- Mask Aligner (UV exposure with backside alignment) – for multi-mask alignment and anisotropic etching mask patterning.
- Spin Coater – photoresist (AZ1518) and HMDS coating with controlled thickness.
- Hot Plate / Soft Bake & Hard Bake Stations – for pre- and post-exposure resist curing.
- Optical Microscope – inspection of photoresist pattern, exposure quality, and defect verification.

## Oxidation & Diffusion

- Thermal Oxidation Furnace – dry/wet/dry oxidation cycles for SiO<sub>2</sub> growth and re-oxidation.
- Annealing Furnace – for dopant activation

## Etching & Surface Preparation

- BOE Etch Setup – for silicon dioxide removal
- TMAH Etch Bath / Hood with Temperature Control – for anisotropic silicon diaphragm etching and thickness tuning.

## Deposition & Metallization

- E-Beam Evaporator – aluminum metallization with thickness monitoring and vacuum control
- Sintering / Anneal Furnace – post-deposition anneal to achieve ohmic contacts.

## Bonding & Packaging

- Anodic Bonder – Si-Pyrex bonding
- Wire Bonder – for Al interconnects during packaging and testing.

## Metrology & Characterization

- Ellipsometer – SiO<sub>2</sub> thickness measurement and calibration
- Precision Micrometer / Thickness Gauge – for wafer thickness measurement before and after TMAH etching.
- Four-Point Probe – sheet resistance measurement for Al and PZR layers.
- Optical Microscope (High Magnification) – pattern alignment and etch verification.

## Device Testing

- Pressure Chamber – used for calibration of the fabricated pressure sensor

Redirection to the skills section is missing when clicking on skills.

At last, ask ChatGPT to make it cohesive - Microfabrication & Embedded

Design changes

Purpose	Suggested Color	Example Use
Primary background	#F5F7F9	Main page background
Section background (cards)	#E9EDF1	“About Me”, “Experience” boxes
Header background	Gradient: #0A2342 → #0077CC	Professional, lab-grade blue tone
Primary text	#1C1E21	All text

Accent color	#00C6A7	Links, hover states, icons
Highlight	#FF7E1B	Call-to-action buttons like “Download Resume”

♦ **Why:** Blue = trust & precision. Teal = innovation. Orange = action. The combination subtly communicates “engineer + researcher + innovator.”

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## 2. Typography & Layout

### Current:

- Font appears to be **Poppins or similar sans-serif** — clean, but slightly playful.

### Recommended:

- Use **Inter, Montserrat, or IBM Plex Sans** — they read more technical and modern.
  - Increase line spacing slightly for better readability (1.6–1.8em).
  - Make section titles smaller but bolder (e.g., “About Me”, “Projects” → 1.5em with extra letter spacing).
- 

## 3. Section Design & Hierarchy

### About Section:

✓ Good summary — professional tone.

🔧 Suggestion:

- Add a **subtle left border accent** (teal line or gradient bar).
- Reduce text width to improve readability (≈700px max).
- Use keywords in **bold** for quick scanning (e.g., “photolithography”, “SPC”, “DOE”, “metrology”).

## Projects Section:

- Use **image thumbnails or icons** for each project (cleanroom → wafer, microchip icons)

## Experience Section:

- Add a **timeline layout** — dates on one side, job description on the other. Looks more technical than bullet points.



## 5. Branding Consistency

Make the top section more personal and confident:

Your name should have a unique style — e.g.,

```
color: linear-gradient(90deg, #0077CC, #00C6A7);  
-webkit-background-clip: text;  
-webkit-text-fill-color: transparent;
```

- 
- Replace the text “LinkedIn | Cincinnati, OH” icons with **clean, minimal SVGs** (smaller, gray tone, turning teal on hover).



## 7. Add Subtle Interactivity

- Add **hover animations** on buttons (slight lift & shadow).
- Use **fade-in sections** on scroll (e.g., with AOS.js or Framer Motion if React-based).
- Add a “**Back to Top**” button at the bottom.