Muhammad Tayyab

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EDUCATION

⇨ **Rutgers University, New Brunswick, NJ, USA** – MS Electrical and Computer Engineering (ECE): Current GPA: 4.0/4.0, Graduating from MS in 2021, Potential PhD Candidate (Qualifying Exam in May 2021).

⇨ **National University of Sciences and Technology (NUST), Islamabad, Pakistan** – BS Electrical and Computer Engineering: Graduated with Honors winning scholarships throughout the course of study. Graduated 2017.

TECHNICAL SKILLS

- ✓ RTL Coding (Verilog)
- ✓ System Integration
- ✓ MATLAB
- ✓ ADS
- ✓ Antenna Design
- ✓ Microsensors
- ✓ ADC
- ✓ Python
- ✓ ANSYS
- ✓ RF & MW Design
- ✓ Nano-sensors
- ✓ PCB Design
- ✓ Embedded Design
- ✓ COMSOL
- ✓ LabVIEW
- ✓ CAD (SolidWorks, AutoCAD)
- ✓ C++
- ✓ CADENCE
- ✓ Microcontrollers

EXPERIENCE

- **Rutgers University, New Brunswick, NJ** **(Aug 2019 – PRESENT)**
  Graduate Teaching and Research Assistant
  - **Teaching Assistant** for Digital Logic Design (DLD) and Electronic Devices.
  - **Research Assistant** in NanoBioElectronics Lab at Rutgers: Conducted Research on **impedance sensing** of various biomarkers under the supervision of Dr. Mehdi Javanmard.
  - Designed, prototyped, and tested **Portable, USB-powered, Biosensing System** and tested its capabilities for the quantification and **detection of cytokines**.
  - Currently **Integrating** the Portable, USB-powered, Biosensing System with different microfluidic components to automate the process of detection so that a **Point-of-Care** solution can be realized.

  *** Publication**: Tayyab, Muhammad, et al. "Potential microfluidic devices for COVID-19 Antibody detection at Point-of-Care (POC): A Review." IEEE Sensors Journal (2020).

- **National Electronics Complex of Pakistan (NECOP)** **(Jul 2017 -Jun 2019)**
  Assistant Manager (Design)
  - Responsible for the supervision of a team of 8 Associate Engineers for designing, prototyping, and testing a 1-16 Wilkinson Divider based feed network for use in an Antenna Array and gained management skills such as project management, Supply Chain Estimation, Budgeting, and Inventory Management.
  - Conducted Cost Benefit Analysis (CBA) of electronic circuit designs.
  - Designed and developed a complete **Low-cost short-range Frequency Modulated Continuous Wave (FMCW) RADAR** system that can be used for multiple applications (including biomedical, instrumentation and surveillance). (**Senior Design Project Bachelor's**)

- **Engro Foods Ltd, Karachi, Pakistan** ---- Supply Chain Intern **(2016)**
- **K-Electric, Karachi, Pakistan** ------ Technical Intern (Electrical Power Distribution) **(2015)**
- **Personal Projects**
  - Developing a non-invasive hypoglycemia detector for diabetic patients to provide real-time and reliable blood oxidation and glucose level data.
  - Optimizing the developed low-cost FMCW radar for the detection of obstacles and developing an automatic braking system to be incorporated in automobiles.
- **Projects During Undergrad**
  - Developed a **RAM** with memory addressing, storing, editing, and deleting capabilities.
  - Implementation of a **SOCIAL NETWORK** using C++ with the features **of Facebook**.
  - Designed a **Waveguide to coaxial adapter** in HFSS.
  - Designed a **4 x 4 Patch Antenna Array** in HFSS.
  - Developed GSM-based **HOME AUTOMATION SYSTEM** using **PIC18F4520**.

AWARDS & HONORS

- **Dean's List** 7 times appearance
- Commandant's **Certificate of Excellence**
- **Dir R&D IEEE** NUST