

# Ahmad Kamil Khan

BS (Electrical Engineering) – Cum Laude  
CGPA: 3.63 (Bronze Medal)

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## Work Experience:

### **ARTICARES Pte. Ltd.** – *Electronics and Embedded System Engineer/Electronics Lead, Product Development*

*Singapore — May 2020 till Present*

I am responsible to all firmware and electronics development and maintenance of ARTICARES products. Multiple projects at different product development stages need to be managed throughout the product development life cycle. Work includes:

- Project Management of medical devices product development.
- Coordination with different departments for smooth product development.
- Coordination with contract manufacturer for smooth production.
- Maintenance and enhancement of existing products.
- Hiring and mentoring team.
- Designing and testing of electronics.
- PCB Designing.
- Firmware development.
- Application and library development to easier use of hardware device by software developer and research customers.
- Sourcing of components.
- Fabrication of electronics.
- Documentation.
- Regulatory compliance and testing.

I also helped the company start a physical office in Pakistan.

**Achievement:** Inventor of patent that is pending for approval.

**Skills:** C/C++, C#, Firmware Development, Circuit Designing, PCB Designing, Debugging, Python, Git, Smartsheet.

**Knowledge:** Altium Designer, Keil uVision, STM32 Development, I2C, UART, Bluetooth, Battery Management, Motor Control, Medical Regulatory Requirement i.e. IEC 60601, ISO 13485, Hiring, Project Management.

**Hardware:** STM32, DC Brushed & Brushless Motors, Motor Encoders, Bluetooth, IMUs, Force/Load Sensors.

### **eMumba Pvt. Ltd. (Now: Axelerated Software)** – *Senior Design Engineer*

*Islamabad, Pakistan — January 2018 till April 2020*

#### **FINTECH:**

- Developing ultra low latency C++ software for high frequency algorithmic trading.
  - Experience implementing CME MDP 3.0 and EUREX T7 feed handler with single digit microsecond latency.
  - Studied ICE, TMX, CBOE and LiquidityEdge architecture specification.
- Working on hardware optimization to achieve best possible latency. This includes cache optimization, kernel bypassing, thread binding, core isolation, BIOS optimization, etc. Heart of all this is benchmarking.
- Reference Links: <http://emumba.com/solutions/fintech>, <http://emumba.com/customers/case-study-bts>, <https://www.axelerated.software>

#### **SEMICONDUCTOR MANUFACTURING:**

- Managing a team of engineers to provide QA and development service to D2S Inc. D2S is a supplier of GPU-acceleration solutions for semiconductor manufacturing. (<https://design2silicon.com/>)

**Skills:** C++, Python, tcl, Linux, Git, SVN, DPK, Onload, TCPDirect, Intel VTune Amplifier, Verilog

**Knowledge:** Linux Kernel, TCP/IP, Networking, FIX Protocol, FAST Protocol, CME MDP 3.0, EUREX T7 Architecture, Semiconductor manufacturing  
**Hardware:** Xeon Servers, FPGA, Raspberry Pi

### **AKSA-SDS – Embedded Design Engineer**

*Islamabad, Pakistan — October 2017 till January 2018*

- Worked on design, development and documentation of Integrated Standby Flight information System.
- Implemented Instrument Landing System (ILS) in HUD Electronics Unit.
- Debugging and testing of faulty avionics equipment.

**Skills:** C++, Verilog, PCB Designing, Reverse Engineering

**Knowledge:** ARINC 239, MIL-STD-1553B, VGA, SPI Protocol

**Hardware:** Microcontrollers, FPGAs, DSPs, Raspberry Pi

### **Huawei Technologies Pvt. Ltd. – Trainee Engineer (Datacom)**

*Islamabad, Pakistan — June 2017 till October 2017*

- Worked in the Datacom department for Ufone's project team.
  - We were a team of 4 engineers managing the whole Pakistan's datacomm network.
- Day to day work included document proposal for network change, approval from relevant authority according to severity of change, and after approval, successful implementation of change in network while coordinating with customers and subcontractors.
- Managed project for removal and warehousing of 50+ old decommissioned router and switch from all over Pakistan.

**Skills:** Huawei CLI, Documentation

**Knowledge:** Networking, GSM Network, TCP/IP, VLAN, RIP, OSPF, MPLS, BGP, IS-IS, Huawei VRP

**Hardware:** Huawei Router and Switches

### **And Or Logic Pvt. – Intern**

*Islamabad, Pakistan — June 2016 till July 2016*

During the period of internship program, I worked on the following tasks:

- Digital Temperature sensor (PIC16 8-bit):
  - Proteus Design and Practical implementation
  - Interfacing temperature sensor with ADC
  - LCD interfacing for UI
  - UART and timer module for external interface and scheduling.
- Product Design and testing of Smart Switch using ESP8266 WiFi module with following main features:
  - Ability to show real time voltage, current, power and switch status on mobile application via internet (cloud) or direct connection.
  - Ability to configure, turn on/off devices and implement schedules through mobile application.
- Schematic design and verification.
- Multi-layer PCB and footprint designing using Altium Designer.
- PCB fabrication using toner transfer method.

**Skills:** C++, PCB Designing, Circuit Designing

**Knowledge:** MQTT, Altium Designer, Proteus

**Hardware:** PIC16, ESP8266, LCD, UART, ADC, Voltage Transformer, Current Transformer

### **Pakistan Telecommunication Company Limited – Intern, NOC**

*Islamabad, Pakistan — July 2015 till September 2015*

During the internship I worked in the Wireless department of PTCL national NOC (Network Operations Center). I was responsible for:

- Monitoring of wireless sites for outages and abnormal behaviour and report immediately.
- Making sure outages are removed as soon as possible.
- Daily and weekly reports of wireless networks.

**Skills:** Documentation, Report Generation

**Knowledge:** NGN, GSM Network, Switching, Modulation techniques, IP Networks, Monitoring software i.e. EMS2000 Client, TeMIP and HP Openview

**Hardware:** BTS

## Other Experience:

- **FAST – NU, Islamabad – Teachers Assistant (Computer Architecture)**  
*Islamabad, Pakistan — Aug 2018 till January 2019*
- **FAST – NU, Islamabad – Teachers Assistant (Feedback & Control Systems)**  
*Islamabad, Pakistan — January 2017 till June 2017*
- **Fiverr – Freelancer (PCB & Circuit Designing, Photoshop Scripting, Powerpoint)**  
*Islamabad, Pakistan — July 2016 till Present*
- **FAST – NU, Islamabad – Head Admission Officer**  
*Islamabad, Pakistan — June 2015 till July 2015*
- **FAST – NU, Islamabad – Teachers Assistant (Circuit Analysis – II)**  
*Islamabad, Pakistan — January 2015 till March 2014*
- **FAST – NU, Islamabad – Teachers Assistant (Circuit Analysis – I)**  
*Islamabad, Pakistan — August 2014 till December 2014*
- **FAST – NU, Islamabad – Admission Officer**  
*Islamabad, Pakistan — June 2014 till September 2014*

## Education:

- **Bachelor of Science (Electrical Engineering) — 2017**  
*FAST - National University of Computer and Emerging Sciences, Islamabad*  
**CPGA: 3.63 (Bronze Medal)**  
**Major:** Computer Engineering  
**Final Year Project:** Autonomous Electric Lawn Mower – A lawn mower which is able to automatically cut the grass without any human intervention.
- **F.Sc. (Pre- Engineering) — 2013**  
*Bahria College, E-8, Naval Complex, Islamabad*  
**GRADE: A**
- **Matriculation (Science) — 2011**  
*Bahria College, E-8, Naval Complex, Islamabad*  
**GRADE: A**

## Activities:

- President of NaSCon '17 — 2016 - 17
- Event Head, Robotics for Beginners Workshop, NaSCon '16 — 2016
- Event Head, Battle of Bots (Robowars), NaSCon '15 — 2015
- Co-founder & General Secretary, IEEE FAST Robotics and Automation Lab — 2015
- Treasurer, IEEE FAST – NU Islamabad — 2014-15
- Organizer, Hello Tomorrow Pakistan — Feb 2015
- Vice Head, Death Well (Robowars), IEEEWeek '14 — 2014
- Coordinator, Robowars, NaSCon '14 — 2014
- Volunteer, First Lego League — 2014
- Volunteer (Aeromodelling Club), Intra FAST — 2013

## Achievements:

- Inventor of patent that is pending for approval.
- Awarded bonus by eMumba Pvt. Ltd. on every 6 monthly performance reviews due to my exceptional performance.
- Shining Star Award by eMumba Pvt. Ltd. for exceptional performance for the year 2018.
- Awarded appreciation shield from AKSA-SDS for my honest and dedicated services to the company.
- Bronze Medal and Cum Laude Honor in Bachelors of Electrical Engineering.

- Silver Medal for grabbing 2nd position in 5th and 7th semester of my Bachelors of Electrical Engineering.
- Name added in Dean's List for securing more than 3.5/4 SGPA in 1st, 2nd, 5th, 6th & 7th Semester.
- Secured 1st Position in Competition of "Robowars" at PisiFi 2016, LUMS, Lahore.
- Secured 1st Position in Competition of "Robowars" at IEEE Electrica '15, NUCES, Islamabad.
- Secured 1st Position in Competition of "Robowars" at NaSCon'16, NUCES, Islamabad.
- Secured 1st Position in Competition of "Robowars" at AirTech'16, Air University, Islamabad.
- Secured 1st Position in International Robotics Challenge, Techfest 2015-16 (Zonal Round – Pakistan) and qualified for the Grand Final
- Secured 2nd Position in International Robotics Challenge, Techfest 2014-15 (Zonal Round – Pakistan) and qualified for the Grand Final
- Secured 2nd Position in Competition of "Speed Wiring" at IEEEWeek'15, NUCES, Lahore.
- Secured 2nd Position in Competition of "Speed Wiring" at IJSEC'15, MAJU, Islamabad.
- Special Award for Scoring 100% in final exam and grabbing A+ in the of "Circuit Analysis – I".
- Silver medal for hockey in LUMS FALL FEST'15.
- Organized Introduction to Robotics Practical Workshop.
- Recipient of Secure and Private AI Challenge Scholarship from Facebook - 2019.
- Recipient of Udacity Technology Scholarship by Bertelsmann - 2019.
- Recipient of Intel® Edge AI Scholarship Program - 2019.

## **Skills & Tools:**

**Communication:** Fluent in English and Urdu

**Analytical Skills:** Can-do Attitude, Quick Learner, Self-Motivated, Responsible, Takes Initiative

**Technical Skills:**

- **Languages:** C, C++, C#, Verilog, Python, bash, Tcl, Matlab, Assembly, HTML and CSS (Basics).
- **Designing Skills:** Software Architecture, PCB Designing, Electronic Circuit Design, Embedded System Design.