Alem H. Fitwi
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Summary:

A seasoned Engineer and instructor with a wealth of experience in Electrical & Computer Engineering, Computer Networking and Security, Business Intelligence, Data Analytics, Data Science and Machine/Deep Learning. I tend more toward Data Science using Python3/R, Machine Learning and Apache Spark for cluster or parallel computing! I also took a Google Data Analytics Certificate recently. Besides, I am very good at fullstack web development using HTML, CSS, & JavaScript for frontend coding, Python3 for backend coding, & MySQL/ORacleDB/PostgreSQL for database programming & management.

Professional & Project Experience:

- ⊕ ***Research Project Assistant (May 2021 - todate):*** In this position, I have successfully completed two projects: 1) A social distancing and Crowd Density Estimation, realized using Deep Learning Model, and two algorithms designed for interpersonal distance and area estimation with a single camera. All implemented using Python3 for Technergetics under the supervision of my adviser. 2) A Communication Algorithm for the implementation of Distributed Collaborative Orthogonal Pursuit Matching Thresholding Algorithm (DC-OMP-TA). Tested on more than three distributed machines. The implementation was done using advanced Python3 for the network communication and MATLAB for interfacing the python apps and DC-OMP-TA's MATLAB implementation of the contracting company.

- ⊕ ***Graduate Assistant(August 2017 - May 2021)***: Doing Business Intelligence (BI), Data Science and analysis on such input datasets as 15-year & semiannually Student Opinion of Teaching (SOOT), Historical and periodical Admission Data, and 25 years research data. Their sizes typically range from 1GB to 5GB. Analysis outputs are mainly actionable data and insightful reports (CSV, EXCEL, SAS, PDF, & RTF/WORD formats) and graphical plots (line graphs, bar charts, pie charts, and scatter plots) generated using SAS, R, Python, and Machine/Deep Learning. And Industry grade dashboards and database designs and developments using Python and MySQL/SQLite.

- ⊕ ***Research***: conduct research works on Privacy & IoT/Edge-Services using optimized and Light-weight Deep Neural Networks and scrambling techniques. Edge computing technologies, Deep-learning/Machine Learning, dynamic chaotic techniques, security tools, a helluva Python programming, R, & SQL are employed. Authored more than 20 articles, conference papers, & a book-chapter published in reputable publishers.

- ⊕ ***Datacenter & University ERP (October 2012 - October 2015)***: managed to build a modern, tier-III datacenter for Mekelle University (P.o.Box: 231, Tigray, Ethiopia) while Director of Information & Communication Technology (ICT) and got its business processes/flows automated.

- ⊕ ***Electrical & SCADA Engineer (in two mega wind-farm projects)***: successfully worked as Electrical Engineer in a 120 MW Wind Farm project (September 2012 to June 2014, Ashegoda, Mekelle, Ethiopia) and as a SCADA Engineer in another 153 MW Wind Farm Project (July 2013 to December 2015; Adama, Ethiopia). I received a certificate of recognition nationally for my remarkable contribution, from the-then deputy prime minister.

- ⊕ ***Teaching Career (September 2006 - August 2017)***: Graduate Assistant II, Assistant Lecturer, Lecturer, & Assistant professor in Mekelle University (P.o.Box: 231, Tigray, Ethiopia). I had taught numerous computer engineering and programming courses.

Leadership:

- ⊕ ***Information & Communication Technology (ICT) Director (October 05, 2012 - October 26, 2015)***: managed the ICT directorate of Mekelle University (Ethiopia) for 3 years, responsible for running the entire university (had a population of more than 35, 000 students and staff) campus area network and ERP. The directorate had 6 departments and 106 IT staff members of various professions.

- ⊕ ***Head & Program coordinator (January 2010 - October 2012)***: Head of the Computer Engineering Chair (11 staff members), and program coordinator of the department of Electrical & Computer Engineering (76 staff members), Mekelle University, for about one year each.

Education:

Binghamton University, State University of New York, Watson School of Engineering *(4400 Vestal Pkwy E, Binghamton, NY 13902, USA)*
 PhD in Electrical & Computer Engineering (*Computer Engineering Stream*), *defended* on 11/17/2021 with perfect CPGA   **Expected: December 2021**
Addis Ababa University *(Addis Ababa, Ethiopia; P.O.Box 1176)*
          M.Sc. in Computer Engineering   **Earned: September 2010**
Bahir Dar University *(Bahir Dar, Ethiopia; P.O.Box 79)*
          B.Sc in Electrical & Computer Engineering   **Earned: July 06, 2006**

Technical Skills:

- ⊕ ***Advanced Python Programming + SQL + Machine Learning***: employed for both academic and professional purposes since 2014, mainly for Data Science and Analysis (Numpy, Pandas, Scipy, Scikit Learn, Seaborn, Matplotlib, Plotly and Dash), for Deep Learning (Lightweight DNN for Conserving Privacy in Edge Devices as part of my PhD research), Network and Network Security Programming (Device Configurations, Extensive String Manipulations using RE, DNS Activity Monitoring, and Network Scan Detection projects), and industry grade dashboard development.

- ⊕ ***SQL (MySQL, SQL Oracle, SQLite, ...)***: Excellent in SQL for database programming and creation of advanced queries and subqueries

- ⊕ ***Fullstack Web Development***: Very good at fullstack web development using HTML, CSS, & JavaScript for frontend coding, Python for backend coding, and MySQL (or Oracle DB, PostgreSQL, etc) for database programming and management..

- ⊕ ***SAS Programming + SQL***: For data analysis (data preprocessing, transforming, mining, visualization, and reporting in xlsx, pdf, & rtf formats).

- ⊕ **R Programming**: Very good in R for Statistical analysis, data cleaning, organizing, analyzing, and static and dynamic(dashboard) visualization using a bunch of packages (tidyverse, dplyr, ggplot2, lubridate, data.table, tidyr, shiny, plotly, mlr3, ...)

- ⊕ **Spreadsheet or google-sheets**: Excellent in data cleaning, organizing, analysis, visualization, and reporting using Microsoft Excel and Google-sheets. Besides, I took Google Data Analytics Certificate (datanalysis strategies plus spreadsheet, google-sheet, & R skill sets)

- ⊕ ***MATLAB Programming***: very good at programming using MATLAB. Others that I used in the past: *C, C++, JAVA, VHDL, PHP, & Ruby*

- ⊕ ***Network Administration & Security***: Very good expertise and experience in IT Networks and Operational Networks (SCADA) design, installation, and administration. I had worked as Network Admin, SCADA Engineer, & ICT Director, and was trained and certified in Advanced Network Administration, Data Center Infrastructures, and Network Security. I can create comprehensive designs for data-centers.

Curriculum Vitae

Personal information	
First name-Middle name-last name	**Alem Haddush Fitwi**
Address	91 Endicott Avet Apartment 3 Johnson City, NY 13790, USA
Telephone(s)	Mobile: +1-607-232-1056
E-mail	ahfitwi@gmail.com / afitwi1@binghamton.edu
Nationality	Ethiopian
Gender	Male

Desired employment / Occupational field	**Data Scientist/Data Analyst/Researcher/Assistant Professor/Lecturer**
Work experience	
Dates	May 25, 2021 to date
Occupation or position held	***Research Project Assistant***

Main activities and responsibilities	➡ Crowd Surveillance Project
	  ➤ Developed Algorithm for social distancing determination using a single camera
	  ➤ Developed Algorithm for the determining area occupied by a crowd using a single camera
	  ➤ Human Detection Model using modified YOLOv3 (Deep Learning)
	  ➤ Developed and implemented a unified model for dynamic people detection, social distance calculation, occupied area estimation, determination of number of social distancing violations, crowd density calculation, and alerting.
	  ➤ The whole project was implemented using Python3
	  ➤ Link to project: https://github.com/ahfitwi/SDProject2021
	➡ Distributed Implementation of DC_OMP_TA
	  ➤ Designed and Developed Algorithms for the distributed implementation of the Distributed Collaborative Orthogonal Matching Pursuit Thresholding Algorithm (DC_OMP_TA) .
	  ➤ A peer-to-peer network was developed for the efficient sharing of object files at steps 3 and 6 of the DC_OMP_TA.
	  ➤ All the testing and implementation was done through the efficient integration of Python and MATLAB codes.
	  ➤ Link to the project is not available because I haven't got a permission to share it in the public domain yet.

Name and address of employer	(RF SUNY) Binghamton University, State University of New York 4400 Vestal Pkwy E, PO Box 6000 Binghamton, NY 13902-6000 Phone: 607-777-2873; Fax: 607-777-4822
Type of business or sector	State University
Dates	August 22, 2017 to May 26, 2021
Occupation or position held	***Graduate Assistant (Data Analytics & Dash Development using SAS, Oracle DB, MySQL, SQLite, Python, Plotly, Dash, & Machine Learning)***
Main activities and responsibilities	⇒ Programming using **Python, MySQL, OracleDB, SQLite, & SAS,** ⇒ Performing Data Analytics (Data Processing + BI + Reports) and Prediction Analysing (Data Science) ⇒ Generating weekly, monthly, & yearly reports (pdf, excel, csv, rtf/word, and graphical formats) of Watson School's SOOT (Student Opinion of Teaching), Admission, & Research Data ⇒ Developing Dashboards using Python + Plotly + Dash + SQLite (for BI, Demographic Analysis, Financial Analysis, and Survey Analysis) ⇒ Designing and Preparing Surveys using Qualtrics, and Analysis of Responses using Python, R, and SQL
Name and address of employer	Binghamton University, State University of New York 4400 Vestal Pkwy E, PO Box 6000 Binghamton, NY 13902-6000 Phone: 607-777-2873; Fax: 607-777-4822
Type of business or sector	State University
Dates	October 30, 2014 to August 21,2017
Occupation or position held	***Assistant Professor***
Main activities and responsibilities	⇒ Giving Lectures on Computer Engineering and ICT courses ⇒ Conducting Laboratory Experiments

	⇒ Carrying out research works
	⇒ Involving in community services and pragmatic ICT & Engineering projects
Name and address of employer	Mekelle University P.O.Box: 231 Mekelle, Tigrai, Ethiopia
Type of business or sector	Governmental Higher Institute
Dates	October 05, 2012 to October 29, 2015
Occupation or position held	***Director of Information & Communication Technology***
Main activities and responsibilities	⇒ Providing leadership and management to the Information & Communications Technology (ICT) directorate. ⇒ Ensuring that ICT provides, operates and maintains the ICT infrastructure, systems and solutions to meet the needs of the administrative, educational, and research programs of the University ⇒ Specification Preparation, Designing and implementing the state-of-the-art datacenter and other ICT infrastructures (Electrical, IT, IP, Surveillance, & Environmental Control Systems). ⇒ Establishing proper ICT governance through an ICT Policy for the university, planning of ICT projects, managing the portfolio of solutions, systems and infrastructure, and instituting a Service Management approach to the services and solutions that the ICT delivers to the university community ⇒ Keeping up with the ever changing Information and Communication Technology, especially identifying new tools and technologies that will move the University's Education and Research responsibilities forward
Name and address of employer	Mekelle University P.O.Box: 231 Mekelle, Tigrai, Ethiopia
Type of business or sector	Governmental Higher Institute
Dates	***July 01, 2013 to December 15, 2015***
Occupation or position held	SCADA (Supervisory Control And Data Acquisition) Expert/Engineer
Main activities and responsibilities	⇒ Design Review & verification of Supervisory Control And Data Acquisition Systems (SCADA software, Supervisory Master station devices, process control devices, communication systems, transmission media (fibre line works) & interconnection interfaces, Embedded systems, physical and logical SCADA networking and Addressing plan) and Electrical Systems (Wind Turbine Generator Electrical Systems, Substation, 33kV & 230kV Transmission Lines and Towers) ⇒ Supervision of the installation works of SCADA systems, Networking and Electrical Wind Turbine Generator (WTG) Systems. ⇒ Supervision of Commissioning and testing of the SCADA systems, Networking and Electrical Wind Turbine Generator (WTG) Systems. ⇒ Reporting and Preparation of SCADA & Electrical works project documents on a daily, weekly, monthly, quarterly, semi-annually, and annually basis.
Name and address of employer	ASTU-MU JV Consultant, ADAMA-II Wind Farm Project (153MW) Client: Ethiopian Electric Power Corporation Contractor: HydroChina-CGCOC JV Adama, Oromia, Ethiopia
Type of business or sector	Consultant
Dates	***September 01, 2012 to June, 2014***
Occupation or position held	Electrical Engineer (& SCADA Expert)
Main activities and responsibilities	Dedicatedly took part in the erection, inspection, installation, testing & commissioning of the following Electromechanical works ⇒ Wind Turbine (Vergnet GEV HP Turbines & Alstom ECO 74 Turbines) ⇒ SCADA Systems (Both Vergnet & Alstom SCADA Systems, MySQL Database, Software, and networking) ⇒ Telecommunication Systems ⇒ Protection & Control Systems ⇒ Interlocking Systems ⇒ HVSS (High Voltage Substation) ⇒ 33kV Overhead & underground lines
Name and address of employer	MU Consultant Team, Ashegoda Wind Farm Project (120MW) Client: Ethiopian Electric Power Corporation Contractor: Vergnet & Alstom (French) Mekelle, Tigrai, Ethiopia
Type of business or sector	Consultant
Dates	***September 21, 2011 to October 05, 2012***
Occupation or position held	***Program Coordinator of Electrical & Computer Engineering Department***

Main activities and responsibilities	⇒ Directing, planning and administering the teaching-learning, research, community and support services of the department ⇒ Managing the overall administrative and financial activities of the department with a mandate to solicit funding for the department. ⇒ Evaluating and monitoring the quality of the teaching-learning, research and community service activities ⇒ Maintaining the balance between the teaching-learning, research and community service assignments of academic staff in consultation with respective course/research chair leaders
Name and address of employer	Mekelle University P.O.Box: 231 Mekelle, Tigrai, Ethiopia
Type of business or sector	Governmental Higher Institute
Dates	*January 14, 2011 to September 21, 2011*
Occupation or position held	*Chair of the Computer Engineering Chair (Stream)*
Main activities and responsibilities	⇒ Directing, and planning the teaching-learning, research, community and support services of the chair ⇒ Evaluating and monitoring the quality of the teaching-learning, research and community service activities of the chair ⇒ Maintaining the balance between the teaching-learning, research and community service assignments of academic staff in consultation with the department program coordinator
Name and address of employer	Mekelle University P.O.Box: 231 Mekelle, Tigrai, Ethiopia
Type of business or sector	Governmental Higher Institute
Dates	*July 18, 2010 to October 29, 2014*
Occupation or position held	*Lecturer of Computer Engineering*
Main activities and responsibilities	⇒ Giving Lectures on Computer Engineering and ICT courses ⇒ Conducting Laboratory Experiments ⇒ Carrying out researches and Preparing Teaching materials ⇒ Involving in community services
Name and address of employer	Mekelle University P.O.Box: 231 Mekelle, Tigrai, Ethiopia
Type of business or sector	Governmental Higher Institute
Dates	*September 02, 2007 to July 18, 2010*
Occupation or position held	*Assistant Lecturer of Electrical & Computer Engineering*
Main activities and responsibilities	⇒ Giving Lectures on Electrical & Computer Engineering courses ⇒ Conducting Laboratory Experiments ⇒ Assisting researches ⇒ Involving in community services
Name and address of employer	Mekelle University P.O.Box: 231 Mekelle, Tigrai, Ethiopia
Type of business or sector	Governmental Higher Institute
Dates	*September 02, 2006 to September 02, 2007*
Occupation or position held	*Graduate Assistant II*
Main activities and responsibilities	⇒ Giving Lectures on Electrical & Computer Engineering courses ⇒ Conducting Laboratory Experiments
Name and address of employer	Mekelle University P.O.Box: 231 Mekelle, Tigrai, Ethiopia
Type of business or sector	Governmental Higher Institute
Dates	*August 15, 2006 to November 16, 2006*
Occupation or position held	*Engineer-I*
Main activities and responsibilities	⇒ Design, Installation, and supervision of Electromechanical Erection works ⇒ Planning and carrying out of Industrial Maintenance for Electromechanical Systems ⇒ Redesigning, maintaining and programming of the communication systems
Name and address of employer	Mesfin Industrial Engineering P.O.Box: 508

	Mekelle, Tigrai, Ethiopia
Type of business or sector	Private Engineering & Manufacturing Company

Education and training

Dates	*August 23, 2017 to Date*
Title of Qualification Awarded	Ph.D. (Defended on November 17, 2021 and completed the required forms to graduate on December 23, 2021)
Principal Subjects/Occupational Skills covered	Electrical and Computer Engineering (Computer Engineering: Privacy, Mechanical Surveillance, Machine/Deep Learning, Blockchain, Security, & Edge Computing)
Name of Organization Providing Education & Training	State University of New York @ Binghamton
Binghamton, New York, USA
Dates	*July 19,2014 to August 10, 2014*
Title of qualification awarded
Principal subjects/occupational skills covered	Huawei IP & IT Product Training Certificate
Huawei IP products (Network Switches, Firewalls, and Terminal Security Management) and IT products (Storage Arrays, Virtual Tape Libraries, Blade Servers, Virtualization & Management)
Name of organization providing education & training	Huawei University
Shenzhen, China
Dates	*September 2008- September 2010 G.C*
Title of Qualification Awarded	M.Sc. (2 years)
Principal Subjects/Occupational Skills covered	**Computer Engineering** (Research Area: Computer & Network Security, & Cryptography)
Name of Organization Providing Education & Training	Faculty of Technology, Addis Ababa University
Addis Ababa, Ethiopia
Dates	*September 2001- July 2006 G.C*
Title of Qualification Awarded	*B.Sc. (Thesis: Cryptography for Image Communication)*
Principal Subjects/Occupational Skills covered	*Electrical & Computer Engineering*
Name of Organization Providing Education & Training	Bahir Dar University, Faculty of Engineering,
Bahir Dar, Amhara, Ethiopia
Dates	*September 1997- July 2000 G.C*
Title of Qualification Awarded	High School Diploma and ESLCE certificate (Score 4.0/4.0)
Principal Subjects/Occupational Skills covered	High School Natural Science 9th to 12th grades.
Name of Organization Providing Education & Training	Kallamino Special High School (9-12: A Boarding School where only top-seed students join)
Mekelle, Tigrai, Ethiopia
Dates	*September 1995- July 1997 G.C*
Title of Qualification Awarded	8th Grade National Examination Certificate (Score Percentile=100%)
Principal Subjects/Occupational Skills covered	Junior Secondary School (7th & 8th Grades).
Name of Organization Providing Education & Training	Maida Agame Junior Secondary School (7-8)
Adigrat, Tigrai, Ethiopia
Dates	*September, 1989-June, 1995G.C.*
Title of Qualification Awarded	6th Grade National Examination Certificate (percentile=99%)
Principal Subjects/Occupational Skills covered	Elementary School (1st to 6th Grades).
Name of Organization Providing Education & Training	Beati-Kanda'ero Elementary School (1-6)
Adigrat, Tigrai, Ethiopia

Personal skills and competences

Mother Tongue	*Tigrigna*
Other Languages	Amharic, English, & French (I was good at French but I have never used it for more than a decade, it evaporated)

| Self-assessment

level

Amharic

English

French	European	Understanding		Speaking		Writing
		Listening	Reading	Spoken interaction	Spoken production	
		Excellent	Excellent	Excellent	Excellent	Excellent
		Excellent	Excellent	Excellent	Excellent	Excellent
		Little	Good	Little	Little	Little

Social skills and competences	⇒ Very good skill of working with peoples of different cultures and ages
Organizational skills and competences	⇒ Good at organizing people and events whilst working in the various positions (Chair, Head and Director)

Computer Hardware/Programming skills & competencies	⇒ Proficient in basic & advanced Computer Skills (MAC-OS, Windows, Unix/Ubuntu, Word, Excel, PowerPoint, etc.)
	⇒ Good in PC maintenance and Computer Networking
	⇒ Excellent in the following Programming Languages (I still use Python and SAS programming Languages, MySQL DBMS):
	o Excellent in SQL, & SQLite (in constant use)
	o Excellent in R Programming (in constant use)
	o Excellent in Python (Computer Networking, Data Analysis, Deep Learning, Machine Learning, & Prediction: I use it almost everyday)
	o SAS (For Data Analysis and Insightful Report Generation, currently in use)
	o Java Programming (Extensively used for Computer Networking and Security Applications, still can program in Java)
	o C programming (the first programming I learnt long ago, I used it until 2010)
	o C++ programming (for most of my B.Sc Degree course projects and Thesis Works, I used it until 2010)
	o VHDL (for research and projects, last use was 2012)
	o Assembly language (for teaching and industry, last use was in 2018)
	o Matlab programming (for research and teaching,still using it for a project implementation this term)
	o PHP along with MySQL DBMS (Web application development for companies, last use of PHP was in 2015)
	⇒ Very Good in MySQL, MS Access, PostgreSQL, and Oracle DBMS (in regular use)
	⇒ Very Good in NoSQL (MangoDB)
	⇒ Good and trained in PLC Ladder Programming (for industry, last use was in 2015)
	⇒ Excellent in SCADA package and Experienced in SCADA Systems installation (last use in 2016)
	⇒ Excellent in Autocad (Last use in 2020 summer for Datacenter Layout Design)
	⇒ Excellent in Visio (Currently in use for any diagram/flowchart creation or layout design)
	⇒ Trained & certified in CCNA, Linux System Administration, and Microsoft Server Administration
	⇒ Practically Trained & certified in the Design, Installation, Testing, & Troubleshooting of Datacenter Electrical Power Supply & Distribution Systems
	⇒ Practically Trained & certified in the Design, Installation, Testing, & Troubleshooting of Datacenter Environmental Control Systems like HVAC or Air Conditioning Systems, Fire Alarm System, & Fire Suppression System
	⇒ Practically Trained & certified in the Design, Installation, Testing, & Troubleshooting of Datacenter Electrical Racking Systems
	⇒ Practically Trained & certified in the Design, Installation, Testing, & Troubleshooting of Datacenter Facilities Management Systems including SACADA System, Biometric Access Control System, & CCTV/VSS
	⇒ HCNA Security Certified

Research and Publication	**Research Areas:**
	⇒ Data Privacy and Security
	⇒ Machine/Deep Learning
	⇒ Edge Computing
	⇒ Video Surveillance
	⇒ Smart Grid
	⇒ Data Analytics
	Publications:

Journal Publications

1) **A. Fitwi**, Y. Chen, and S. Zhu, "Enforcing Privacy-Preservation on Edge Cameras using Lightweight Video Frame Scrambling," the IEEE Trans. on Services Computing, R2 submitted on Nov. 01, 2021, under review.
2) **A. Fitwi**, Y. Chen, and S. Zhu, "Lightweight Frame Scrambling Mechanisms for End-to-End Privacy in Edge Smart Surveillance," the IET Smart Cities, Special Issue on Smart Computing for Smart Cities, November 2021.
3) **A. Fitwi**, Y. Chen, H. Sun, and R. Harrod, "Estimating Interpersonal Distance and Crowd Density with a Single Edge Camera," the MDPI Computers, October 2021.
4) **A. Fitwi**, Y. Chen, S. Zhu, E. Blasch, and G. Chen, "Privacy-Preserving Surveillance as an Edge Service based on Lightweight Video Protection Schemes using Face De-Identification and Window Masking," MDPI Electronics, Special Issue on 10th Anniversary of Electronics: Recent Advances in Computer Science and Engineering, 2021, Vol. 10, No. 3, 236.
5) **A. Fitwi**, M. Yuan, S. Y. Nikouei, and Y. Chen, "Minor Privacy Protection by Real-Time Children Identification and Face Scrambling at the Edge," the EAI Endorsed Transactions on Security and Safety, May 2020.
6) R. Xu, S. Y. Nikouei, D. Nagothu, **A. Fitwi**, and Y. Chen. "Blendsps: A blockchainenabled decentralized smart public safety system," Smart Cities, 3(3):928-951, 2020.
7) **Fitwi, A. H.** and Nouh, S., "Performance analysis of chaotic encryption using a shared image as a key," Zede Journal 28, 17–29 (2011).

Conference Paper Publications

8) **A. Fitwi**, Y. Chen, and S. Zhu, "PriSE: Slenderized Privacy-Preserving Surveillance as an Edge Service," the 6th IEEE International Conference on Collaboration and Internet Computing (IEEE CIC 2020), Virtual Conference, Dec. 1 - 3, 2020. [Best Paper Award].
9) **A. Fitwi** and Y. Chen, "Privacy-Preserving Selective Video Surveillance," the 29th International Conference on Computer Communications and Networks (ICCCN 2020), Honolulu, Hawaii, August 3 – 6, 2020.

	10) M. Yuan, S. Nikouei, **A. Fitwi,** Y. Chen, and Y. Dong, "Minor Privacy Protection Through Real-Time Video Processing at the Edge," the 2nd International Workshop on Smart City Communication and Networking (SmartCityCom2020), in conjunction with the 29th International Conference on Computer Communications and Networks (ICCCN 2020), Honolulu, Hawaii, August 3 – 6, 2020
	11) **A. Fitwi**, D. Nagothu, Y. Chen, and E. Blasch, "A Distributed Agent based Framework for a Constellation of Drones in a Military Operation," the 2019 Winter Simulation Conference, National Harbor, MD, USA, December 8 – 11, 2019.
	12) **A. Fitwi**, Y. Chen, and S. Zhu, "No Peeking through My Windows: Conserving Privacy in Personal Drones," the 5th IEEE International Smart Cities Conference (ISC2 2019), Casablanca, Morocco, October 14 - 17, 2019.
	13) **A. Fitwi,** Y. Chen, and S. Zhu, "A Lightweight Blockchain-based Privacy Protection for Smart Surveillance at the Edge," Position Paper, the International Workshop on Lightweight Blockchain for Edge Intelligence and Security (LightChain), held in conjunction with the 2nd IEEE International Conference on Blockchain (Blockchain-2019), Atlanta, USA, July 14 - 17, 2019.
	14) **A. Fitwi** and Y. Chen, "Privacy-Preserving Selective Video Surveillance," the 29th International Conference on Computer Communications and Networks (ICCCN 2020), Honolulu, Hawaii, August 3 – 6, 2020.
	15) **A. Fitw**i, Y. Chen, and N. Zhou, "An Agent Administrator based Security Mechanism for Distributed Sensors and Drones for Smart Grid Monitoring," the SPIE Defense and Commercial Sensing 2019 (DCS), Conference on Signal Processing, Sensor/Information Fusion, and Target Recognition, Baltimore, MD, USA, April 14-18, 2019.
	16) **A. Fitwi,** D. Nagothu, Y. Chen, and E. Blasch, "A Distributed Agent based Framework for a Constellation of Drones in a Military Operation," the 2019 Winter Simulation Conference, National Harbor, MD, USA, December 8 – 11, 2019.
	17) Mali, D. and **Fitwi, A.** "Home monitoring system using wireless sensors network via the internet," TECHNIA Journal 7(1) (2014).
	Workshop Paper Publications 18) **A. Fitwi** and Y. Chen, "Secure and Privacy-Preserving Stored Surveillance Video Sharing atop Permissioned Blockchain," the 4th International Workshop on Blockchain Enabled Sustainable Smart Cities (BLESS), in conjunction with 30th International Conference on Computer Communications and Networks (ICCCN 2021), Athens, Greece, July 19 – 22, 2021.
	Book Chapters **19)** **A. Fitwi**, Z. Yang, Y. Chen, and X. Lin, "Smart grids enabled by edge computing," Book: "Edge Computing: Models, technologies and applications", p. 381 –408 (28), publisher: Institution of Engineering and Technology (IET) in Edge Computing: Models, technologies and applications, 2020.
Major Professional Project Achievements	⇒ Managed to build the state of the art Datacenter and ICT infrastructure in Mekelle University (with full involvement starting from the business requirement analysis, Specification preparation, Design preparation, installation, supervision, testing, to commissioning) ⇒ Played good managerial and consulting roles in the Mekelle University Automation works including Student Information Management System, Procurement Management System, Research Management System, Financial Management System, Property Management System, Human Resource Management System, & Fleet Management System developed by a hired company, Winners Engineering PLC. ⇒ *Managed the Team that had been developing and deploying Student Information Management System software in 50 selected Tigray High Schools in collaboration with the Tigray Bureau of Education.* ⇒ *Successful involvement as Electrical Engineer in the Construction, Installation, testing, and commission of the 120MW power plant of "Ashegoda Wind Farm Project"* ⇒ *Member of the Consultant Team(As Electrical Engineer/SCADA Engineer) of the 153MW Power Plant project of Adama-II Wind Farm Project* ⇒ *Managed to develop and deploy a very good Quality Control, Material Planning, & Warehouse Management Software for Addis Pharmaceutical Factory S.C.* ⇒ *Developed SAS Based Software for analyzing SOOT and Research Data of Watson School and generating Reports.* ⇒ *Developed standard Dashboard using Python, Plotly, Dash, and SQLite for Watson Continuing Education Program.*
Additional information	***Professional Society or Charitable Organizations Membership*** ⇒ Global Society of Tigrian Scholars (GSTS) => Professional Society (Member of the Information and Communication Technology) ⇒ Student Ambassador @ Binghamton University 2019, 2020() ⇒ Global Society of Tigrian Scholars (GSTS) => Professional Society (Ex-Member of the Board of Directors, & Ex-Head of the Community Empowerment Directorate) ⇒ Kallamino Alumni Association => Charitable Organization (Ex-Vice President and President) ***Academic Projects:*** ⇒ Optimizing Multiclass classification using Convex Optimization (Ph.D. course project)

	⇒ Eye-Disease Detection using Deep Learning & Neural Networks (Ph.D. course project)
	⇒ Advanced String manipulations using Regular expressions for Network Security Analysis
	⇒ Implementation and Test of an 8051 microcontroller on Xilinx Spartan-3 XC3S200 FPGA (M.Sc. Independent project)
	⇒ *B.Sc. thesis* and Final year project on: *"Cryptography for Image Communication"*
	⇒ *B.Sc. Mini Project on: "Design of smart Encoding and Decoding of Voice Communication" (VOCODER)*
	⇒ *Face recognition using ANN (M.Sc. project)*
	⇒ *Software (GUI) for RSA and Elliptical cryptography*
	⇒ *Software for DES, AES and Secure Hashing*
Online Courses Learned at my own pace	⇒ The Ultimate 2022 Fullstack Web Development Bootcamp (Udemy)
	⇒ Python for Data Science and Machine Learning Bootcamp (Udemy)
	⇒ The Complete Oracle SQL Certification Course (Udemy)
	⇒ SAS Programming BASE certification course for SAS Beginners (Udemy)
	⇒ Complete SAS Bootcamp (Udemy)
	⇒ Certified Ethical Hacker (CEHv3.0) Training Course for 2019 (Udemy)
	⇒ Hands-on Penetration Testing Labs 2.0 (Udemy)
	⇒ Python for Computer Vision with OpenCV & Deep Learning (Udemy)
	⇒ Learn Computer Vision with OpenCV Library using Python (Udemy)
	⇒ Ethereum and Solidity: The complete Developer's Guide (Udemy)
	⇒ The Cryptocurrency Bible | Bitcoin, Ethereum, Altcoin, … (Udemy)
	⇒ Complete Guide to TensorFlow for Deep Learning with Python (Udemy)
	⇒ Python 3 Network Programming-Build 5 Network Applications (Udemy)
	⇒ Python 2 Network Programming-Build 12 Multi-Vendor Tools (Udemy)
	⇒ Python 2 Network Programming-Build 20 Basic Security Tools (Udemy)
	⇒ Deep Learning A-Z : Hands-on Artificial Neural Networks (Udemy)
	⇒ Complete Python Bootcamp: Go from zero to hero in Python Three (Udemy)

References:

1) Dr. Yu Chen, Associate Professor in ECE Dept, Watson School, BU, ychen@binghamton.edu ; My Academic Adviser
2) Dr.Peter J. Partell, Associate Dean for Academic & Administration of Watson School, partell@binghamton.edu; My work Supervisor
3) Dr. Krishnaswami Srihari, Dean of Watson School & Distinguished Professor, email: srihari@binghamton.edu;

With regards

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(Life Motto: "With Patience, we can dissect an ant and reach its heart")

NB: For every work experience claimed in this CV, there is a corresponding corroborating original testimony letter from the concerned office. If need be, the original testimony letters could be shown or provided in copies to your good office.