Curriculum Vitae

Personal information

First name-Middle name-last name	**Alem Haddush Fitwi**
Address	65 Front Street Apartment 301 Binghamton, NY 13905, 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/Researcher

Work experience

Dates	August 22, 2017 to Date
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
Name and address of employer	Binghamton University, State University of New York PO Box 6000 Binghamton, New York 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
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, Ashegodal 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. (ABD)
Principal Subjects/Occupational Skills covered	Electrical and Computer Engineering (Computer Eng'g: Privacy, 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	Huawei IP & IT Product Training Certificate
Principal subjects/occupational skills covered	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, evaporated)

Self-assessment
European level
Amharic
English
French

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 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 Python (Computer Networking, Data Analysis, Deep Learning, Machine Learning, & Prediction: currently in use)
	    o SAS (For Data Analysis and Insightful Report Generation, currently in use)
	    o Java Programming (Extensively used for Computer Networking and Security Applications, last use was 2014)
	    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)

- VHDL (for research and projects, last use was 2012)
- Assembly language (for teaching and industry, last use was in 2018)
- Matlab programming (for research and teaching, last use was in 2018)
- PHP along with MySQL DBMS (Web application development for companies, last use of PHP was in 2015)

⇒ Good in MySQL DBMS (in regular use)

⇒ 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

⇒ Trained & certified in Level C CDMA ZTE Technology

⇒ HCNA Security Certified

Research and Publication

Research Areas:
⇒ **Privacy and Security**
⇒ **Edge Computing**
⇒ **Video Surveillance**
⇒ **Smart Grid**

Publications:

★ Fitwi, A., Chen, Y., Zhu, S., Blasch, E., and Chen, G., "Privacy-preserving surveillance as an edge service based on lightweight video protection schemes using face de-identification and window masking," Electronics 10(3), 236 (2021).

★ Fitwi, A., Chen, Y., and Zhu, S., "Prise: Slenderized privacy-preserving surveillance as an edge service," in [2020 IEEE 6th International Conference on Collaboration and Internet Computing (CIC)], 125–134, IEEE (2020).

★ Fitwi, A. and Chen, Y., "Privacy-preserving selective video surveillance," in [2020 29th International Conference on Computer Communications and Networks (ICCCN)], 1–10, IEEE (2020).

★ Fitwi, A., Yuan, M., Nikouei, S. Y., and Chen, Y., "Minor privacy protection by real-time children identification and face scrambling at the edge," submitted to EAI Endorsed Transactions on Security and Safety (2020).

★ Fitwi, A., Chen, Y., and Zhu, S., "No peeking through my windows: Conserving privacy in personal drones," in [2019 IEEE International Smart Cities Conference (ISC2)], 199–204, IEEE (2019).

★ Fitwi, A., Chen, Y., and Zhu, S., "A lightweight blockchain-based privacy protection for smart surveillance at the edge," in [2019 IEEE International Conference on Blockchain (Blockchain)], 552–555, IEEE (2019).

★ Fitwi, A., Chen, Y., and Zhou, N., "An agent-administrator-based security mechanism for distributed sensors and drones for smart grid monitoring," in [Signal Processing, Sensor/Information Fusion, and Target Recognition XXVIII], 11018, 110180L, International Society for Optics and Photonics (2019).

★ Fitwi, A. H., Nagothu, D., Chen, Y., and Blasch, E., "A distributed agent-based framework for a constellation of drones in a military operation," in [2019 Winter Simulation Conference (WSC)], 2548–2559, IEEE (2019).

★ Fitwi, A. and Mali, D., "Home monitoring system using wireless sensors network via the internet," TECHNIA Journal 7(1) (2014).

★ Fitwi, A. H. and Nouh, S., "Performance analysis of chaotic encryption using a shared image as a key," Zede Journal 28, 17–29 (2011).

★ Yuan, M., Nikouei, S. Y., Fitwi, A., Chen, Y., and Dong, Y., "Minor privacy protection through real-time video processing at the edge," arXiv preprint arXiv:2005.01178 (2020).

★ Xu, R., Nikouei, S. Y., Nagothu, D., Fitwi, A., and Chen, Y., "Blendsps: A blockchain-enabled decentralized smart public safety system," Smart Cities 3(3), 928–951 (2020).

★ Yekun, E. A., Fitwi, A. H., Selvi, S. K., and Kumar, A., "Short-term wind speed forecasting based on lssvm optimized by elitist qpso," arXiv preprint arXiv:2010.07757 (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 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 |
- ⇒ 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;
4) Mahder Girmay, Head of ECE School, Mekelle University , email: mahderian@yahoo.com, Mobile Number: +251923667962

With regards

Alem Haddush Fitwi
Ph.D. Student & Graduate Assistant (Data Analyst)
Department of Electrical & Computer Engineering
Watson School of Applied Science & Engineering, State University of New York @ Binghamton
(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.

For more information on Europass go to http://europass.cedefop.europa.eu
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