



Tshwane University
of Technology

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Faculty of Information and
Communication Technology

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TECH TRIUMPHS

Highlighting ICT Faculty Alumni achievements

#fromGood2Great

Tech Triumphs
Vol 1 Issue 1

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Championing youth leadership, digital empowerment, and community transformation

Abdicate Nkuna is a transformational South African leader, youth advocate, and technology enthusiast whose journey reflects courage, purpose, and unwavering commitment to social impact. Born and raised in Giyani, ka-Gawula in Limpopo, she has become a powerful voice for young people and women across the country, using leadership as a tool for change and technology as a pathway to opportunity.

A proud born-again Christian and community builder, Abby is widely respected for her advocacy in social justice, women's empowerment, and ethical leadership. Her influence stretches across universities, national youth platforms, and continental movements dedicated to uplifting the next generation.

Abby made history at the Tshwane University of Technology as the first female SRC President of the Polokwane Campus, elected unopposed and rising from her first year through dedication, integrity, and service. She went on to serve in multiple strategic portfolios, continuing to build a legacy rooted in accountability and empowerment.

ABDICATE NKUNA

Today, she leads nationally and globally. As the National President of AIESEC in South Africa, Abby drives youth leadership development, global cultural exchange, and national empowerment strategies. She also serves as the National Media & Communications Lead for Young Women of Africa (YWOA), where she advocates for gender-based violence awareness, women's safety, and women-centered development across the continent.

Her spiritual grounding has shaped much of her leadership path. Abby served in various roles within the Students' Christian Organisation (SCO), ultimately becoming the National Chairperson of the Higher Institutions Executive (NATHIEX), where she nurtured faith-based leadership among students.

Her grassroots activism spans more than a decade and includes:

- Sanitary pad dignity drives
- GBV awareness and prevention campaigns
- Mental health and youth wellness initiatives
- Rural learner support and university application programs
- Community outreach projects since 2013

As a Computer Science postgraduate student and tech advocate, Abby is passionate about digital literacy, AI readiness, and ensuring that technological opportunities reach underserved communities. Her professional journey includes serving as a Student Assistant in ICT Services and at the I-Centre at TUT Polokwane Campus, where she supported students in accessing digital and academic resources.

Abby envisions a future where:

- Leadership is ethical and accountable
- Innovation is youth-driven
- Women lead safely and boldly
- Education and digital access are universal
- Communities grow through collaboration
- Social justice and dignity are upheld

Her mission is rooted in service and transformation. She seeks to help build a South Africa where young people rise with confidence, women claim their power, and communities move forward together.

"Leadership is not inherited; it is shaped. And I am shaping mine by serving," she said.

Advancing intelligent communication systems and building responsible digital citizens

Dr Phatle Solly Maswikaneng



With more than two decades of service to the Faculty of ICT's department of Information Technology (IT), Dr Phatle Solly Maswikaneng has established himself as a respected academic, researcher, and leader within the Faculty of ICT. His career reflects a deep commitment to advancing emerging technologies while strengthening the academic excellence and research culture of the department.

Dr Maswikaneng holds a Doctor of Computing (Information Technology) from TUT, specialising in Free Space Optical (FSO) wireless communications. His doctoral research focused on improving Quality of Service (QoS) in optical wireless networks by developing neural network-based atmospheric turbulence mitigation models, a contribution that enhances reliability in next-generation communication systems. Over the years, his research portfolio has expanded to include atmospheric attenuation modelling, machine learning, cybersecurity, cloud security, and intelligent networking systems. A highly experienced academic leader, Dr Maswikaneng has served several terms as Acting Head of Department, guiding departmental strategy, operational planning, curriculum coordination, resource management, and industry engagement. He currently leads postgraduate academic matters as Programme Coordinator for Undergraduate and Postgraduate Studies, where he oversees admissions, supervision processes, research quality, and student research development. His leadership has made him an essential contributor to faculty-level research structures.

Dr Maswikaneng maintains an active research footprint with publications in accredited national and international journals and conferences. He has chaired sessions at IEEE conferences, reviewed scholarly work for multiple journals, and contributed valuable insights into the modelling and prediction of QoS in optical wireless communication systems. His dedication to postgraduate development is evident in his successful supervision of numerous M-Tech and MComp graduates, as well as his ongoing guidance of research in areas such as machine learning, IoT security, cloud security, and intelligent communication systems.

A member of IAENG, SAAIR, and SAICSIT, Dr Maswikaneng has been recognised for his academic excellence as the Top Young Researcher (Runner-Up) in the Faculty of ICT for both 2017 and 2018. His work continues to influence and strengthen ICT scholarship, innovation, and technological advancement in South Africa.

Beyond his research and academic leadership, Dr Maswikaneng is committed to community upliftment and the digital well-being of young people. In collaboration with TUT's Schools of Specializations outreach initiative, he presented a Cyberbullying Awareness Programme at Mapenane School of Specialization and Endendale High School, reaching learners with practical knowledge on responsible digital behaviour.

The programme introduced learners to key concepts in online safety, explaining cyberbullying as the use of digital platforms such as social media, messaging apps, and online forums to harass, intimidate, or harm others. Through clear examples and real-life scenarios, learners gained an understanding of behaviours that constitute cyberbullying, including harmful messaging, public humiliation, impersonation, spreading rumours, and exclusion from online groups.

Dr Maswikaneng highlighted the serious consequences cyberbullying can have on learners' emotional well-being, self-esteem, academic performance, and overall mental health. He emphasised how fast harmful content can spread online and how anonymity often encourages negative behaviour, making it difficult for victims to seek help.

The workshop equipped learners with practical strategies to protect themselves online:

- using strong privacy settings
- avoiding the sharing of sensitive personal information
- reporting harmful conduct
- blocking offenders
- saving evidence of cyberbullying
- seeking support from trusted adults

Schools were encouraged to strengthen their digital safety policies, establish clear reporting channels, and integrate digital citizenship education into their learning environment.

This programme not only deepened learners' understanding of cyberbullying but also empowered them to contribute positively to a respectful and responsible online culture.

From mentor to ICT professional: Karabo Mavundla's journey of growth and empowerment



Karabo Mavundla is a committed and hardworking young professional who completed her Informatics (Business Analyst) qualification at Tshwane University of Technology in 2025 under the Faculty of ICT. Alongside her studies, she strengthened her technical foundation by earning a Cybersecurity Certificate (2024), a qualification that allows her to link business needs with secure and reliable IT solutions, a valuable combination in the digital era.

Throughout her academic journey, Karabo distinguished herself not only through strong academic performance but also through leadership, service, and personal growth. Her time at TUT reflects the journey of a student who embraced responsibility, uplifted others, and developed the skills needed for a successful career in ICT.

In 2022, Karabo became a Student Mentor, a role in which she provided academic support, guided first-year students, and helped many adjust to university life. She made complex concepts easier to understand, assisted with study planning, and worked closely with fellow mentors to create a supportive and engaging learning environment.

Her dedication earned her the Best Student Mentor Award (2023), a recognition based on outstanding feedback from students and lecturers who benefited from her guidance. Many of her mentees succeeded academically, with some later becoming mentors themselves, demonstrating the lasting impact of her leadership.

Karabo's academic record reflects consistent high performance in information systems, data analytics, systems development, and business analysis. She completed her Informatics qualification with strong practical competency, applying theoretical knowledge to real-world IT and business scenarios.

Her commitment to lifelong learning also led her to join the Book Club Programme (2023), where she nurtured her passion for reading and began building the foundation for a future dream, writing her own book.

During her internship, Karabo developed another valuable skill: training facilitation. The experience allowed her to gain confidence in presenting, teaching, and engaging professional audiences, skills that complement her strengths in business analysis and mentorship.

Karabo played a key role in student support and engagement within the Faculty of ICT. Some of her notable contributions include:

- Organising study sessions with mentors and tutors to help students prepare for tests and exams
- Supporting First-Year Orientation and helping new students adjust to university life
- Promoting collaboration and inclusivity, which strengthened the sense of community within the department
- Developing leadership and communication skills, including improved confidence, patience, and teamwork

Through her dedication, professionalism, and compassion, Karabo became a role model to many. Her mentees admired her work ethic and commitment to their success, often describing her as someone who encouraged them to believe in themselves and to strive for academic excellence.

Now a proud TUT alumna, Karabo is equipped with solid technical knowledge, leadership experience, and a passion for empowering others. With expertise in business analysis, cybersecurity fundamentals, and training facilitation, she is prepared to contribute meaningfully to the ICT and business industries. Her journey reflects the Faculty of ICT's values, resilience, service, and lifelong learning and she continues to inspire others through her story of growth, dedication, and purpose.



From XR innovator to cloud Engineer, a Journey of leadership, resilience, and growth

Ayanda Mnisi is a driven and forward-thinking ICT professional whose career journey reflects determination, adaptability, and a deep commitment to leadership. His pathway from extended reality development to cloud engineering demonstrates a rare blend of technical versatility and student-centred service, qualities shaped and strengthened during his time at the Faculty of ICT.

Ayanda began his professional journey in 2022 while completing his undergraduate qualification. He joined CXI-Africa as an intern, where he developed foundational knowledge in Extended Reality (XR), Virtual Reality (VR), and Augmented Reality (AR). Later that year, he expanded his skill set at Simulated Training Solutions, contributing to immersive simulation-based training solutions for the mining sector.

In 2023, Ayanda's potential opened international doors when he received an offer from Amazon Web Services (AWS) to join as a Cloud Support Associate. A year later, he was promoted to Cloud Support Engineer, marking a major leap in his career. Transitioning into cloud computing proved both challenging and rewarding, a transformative shift from his earlier work in XR, and he continues to grow within one of the world's leading technology organisations.

Ayanda's influence within the Faculty of ICT extends far beyond academics. His leadership journey began in his first year when he served as a class representative, earning several recognitions, including Top Performer, Best Idea, and Best Presentation. In his second year, he was elected Chairperson of the ICT Faculty Mentorship Programme, leading initiatives that strengthened academic support structures, enhanced student engagement, and helped learners navigate the challenges of university life.

Between 2020 and 2021, Ayanda served as ICT Student Faculty Council (SFC) Chairperson, representing students at Faculty Board and Executive Committee meetings. Leading during the peak of COVID-19, he played a pivotal role in the transition from contact learning to virtual platforms. Working in collaboration with the Faculty Executive, he helped ensure:

- continuity in teaching and learning
- improved accessibility to academic resources
- support for students facing academic exclusion
- establishment of functional virtual academic support systems

These efforts were instrumental in helping students navigate one of the most difficult periods in the faculty's history. His exceptional service earned him two major honours from the Directorate of Student Governance and Leadership Development (SGLD):

- Best SFC Performer Award
- Most Resourceful Activist Award

Ayanda later continued his contribution as part of the Lab Assistants team, helping maintain fully operational computer labs that supported students during tests and exams. He also played a key role in the Tshwane Varsity Hackathon (TVH), being part of the early planning team that shaped the project's success.

Ayanda attributes much of his success to the guidance and support he received from the Faculty of ICT. He expresses special appreciation to Dr Etienne van Wyk (Executive Dean), Mr Phurutsi (First-Year Foundation Unit Manager), and many others who invested in his potential.

Coming from the streets of Soshanguve, Ayanda regards his experiences at TUT as life-changing, providing him with opportunities, leadership platforms, and exposure that ignited both his academic and professional growth.

Pioneering Accessible African Technology Through Vision and Innovation

Lesley Ncube is a name steadily rising in South Africa's technology landscape. The Computer Scientist, Software Developer and Entrepreneur's work reflects ambition, technical mastery and a commitment to African-designed innovation. With more than a decade of experience in computer manufacturing and software development, Ncube has positioned himself as a leader in the industry and a visionary shaping the future of locally produced technology.

In 2018, he founded Thatha, a South African-based tech company with a mission to design innovative, interconnected software and hardware solutions tailored specifically for African needs. What began as an entrepreneurial dream has since evolved into a thriving technology enterprise, gaining local traction and global attention.

Ncube's leadership is defined by clarity of vision, strong technical understanding and confidence in Africa's potential to produce world-class technology.

Starting his journey at the Tshwane University of Technology (TUT), he enrolled for Computer Science, gaining the technical expertise necessary to lead Thatha's product development from inception.

In addition to his responsibilities at Thatha, Ncube actively contributes to the broader tech ecosystem. He serves on the Advisory Board of TUT's Faculty of Computer Science, helping shape academic and industry alignment for future graduates. Also, as a Google for Startups Mentor, he invests time and experience into supporting emerging African tech entrepreneurs, demonstrating a commitment to uplifting the next generation of innovators.

At the core of his mission is accessibility. Under his leadership, Thatha introduced the Shumiphone, a proudly South African mobile device engineered to fill the market gap created by expensive international brands. The Shumiphone delivers high performance at a fraction of the traditional cost, offering:

- Enhanced speed and processing power
- Durable design suited for local conditions
- Large storage capacity
- Full compliance with South Africa's security and regulatory requirements

This device is an achievement in African hardware innovation and evidence of Ncube's determination to build technology for Africa, by Africa. Ncube's strategic direction has pushed Thatha into new spheres of recognition and commercial success.

Thatha has been featured at the Africa Tech Startup Forum and is officially listed on EuroQuity, a platform that connects high-growth companies with global investors, clearly signalling Thatha's international investment readiness.

The company's devices have gained significant market traction, with more than 4,500 units sold to date, an impressive achievement for a young hardware startup.

Ncube has secured high-value collaborations, including:

- Incubation with The Innovation Hub and 4IRI, supporting product research and scaling.
- Partnerships with major telecommunications companies, including MTN through its ESD Program and Telkom.

Under Ncube's leadership, Thatha has also won major government tenders, including:

- The National Treasury, through the RT15 contract
- DIGITECH, for the supply of locally manufactured devices



These partnerships underscore Thatha's growing role in strengthening South Africa's digital infrastructure through compliant and cost-effective technology.

With every strategic move, Lesley Ncube reinforces Thatha's place as a transformative force in South Africa's technology sector. His work is shifting the narrative from reliance on imported technology to embracing homegrown solutions that meet the continent's unique needs. His leadership embodies ambition, innovation and confidence in African capability – all qualities that continue to inspire students, entrepreneurs and industry leaders.

Lesley Ncube's vision, technical excellence and a commitment to accessible innovation redefine what it means to build technology in Africa and for Africa.

Suprise Kgaogelo Mashao:

Leading change through technology with enthusiasm and adaptability

Hailing from the deep villages of Tzaneen, Suprise Kgaogelo Mashao is a young, talented, and driven ICT professional whose journey reflects resilience, ambition, and a commitment to making a difference through technology. From her early education at Mandela Barlworld Agricultural High School to her time at the Tshwane University of Technology, Suprise has consistently embraced opportunities to learn, lead, and innovate.

She joined TUT in 2020 to pursue a Diploma in Informatics in the Faculty of ICT. During her studies, Suprise became a facilitator for extracurricular initiatives, including the Top Art & Culture Program and Student Governance Leadership Development (SGLD).

Her leadership and passion for student development were evident in 2022 when she led a group of students, sharing her experiences and mentoring peers to achieve their best. In 2023, she served as an Academic and Lab Tutor at the Dean's Office through the Student Academic Support Office (SASO), further supporting student learning and engagement.

Suprise's professional journey is marked by versatility and technical growth. In 2023, she completed an internship at the Informatics Community Engagement Programme (ICEP) as a Business Analyst, contributing to the development of SASO, a system designed to bridge the gap between students and lecturers. She later joined Fluidintellect as a Software Tester, embracing additional responsibilities including Scrum Master, before advancing to Product Technical Lead in 2025.

She then joined Huawei as a Data Analyst, completing a one-week intensive training program in China that equipped her with advanced data analysis skills and exposure to cutting-edge technologies. Her academic excellence has been widely recognised. In 2023, Suprise received a Chancellor's Award for outstanding undergraduate performance. In 2024, she was named Best Academic Advanced Diploma Student across the faculty and Top Academic Achiever for her Advanced Diploma in Informatics.

Guided by her life motto, "Do not make an excuse out of circumstances, either good or bad, to not study and acquire education", Suprise Kgaogelo Mashao continues to exemplify perseverance, innovation, and leadership. Her journey inspires others to overcome challenges, embrace learning, and leverage technology to create meaningful change in the world.



Leading innovation, advancing Cybersecurity, and shaping the future of ICT

Prof Topside Ehleketani Mathonsi stands as one of the Faculty of ICT's most dynamic and accomplished scholars, a visionary academic whose work continues to redefine research, innovation, and leadership at the Tshwane University of Technology (TUT). Now serving as Associate Professor and Head of the Department of Information Technology (IT), he is among the youngest South African scholars to achieve this academic rank in computing, a milestone that reflects his exceptional drive and scholarly impact.

Prof Mathonsi completed his Doctor of Computing in Information Technology at TUT in 2020, specialising in cybersecurity, Internet of Things (IoT), wireless communications, 5G technologies, and smart agriculture. His research footprint continues to grow rapidly, with an impressive body of work that includes 6 book chapters, 31 peer-reviewed journal articles, and 76 conference papers, cementing his status as a leading researcher in emerging technologies.

A multiple award-winning academic, Prof Mathonsi has been recognised repeatedly as the Faculty of ICT's Young Researcher of the Year, and in both 2023/2024 and 2024/2025 he was nominated for the prestigious TW Kambule-NSTF Emerging Researcher Award, one of South Africa's highest honours for young scientists. He was also named a Future Star in the Huawei ICT Competition (Southern Africa) and awarded Best Computer Science Reviewer at SAICSIT 2025.

He is also a trusted adjudicator at major national innovation platforms such as the Mpumalanga AI Student Hackathon, the SATNAC Industry Solutions Challenge, and the SATNAC Poster Presentations, where he helps shape and uplift young talent in the ICT sector.

Prof Mathonsi's expertise is recognised across Africa and internationally. In 2025 alone, he delivered keynote presentations and plenary addresses at several high-profile events, including:

- IEEE Wireless Africa Conference (WAC 2025) – presenting on machine learning models for crop yield prediction.
- TUT Licence to Lead Programme – speaking on academic leadership and fostering inclusive work environments.
- Erasmus+ ProCyD Programme in Mozambique – training institutions on data protection and cyber resilience.
- Cybersecurity and AI Workshop (TUT) – guiding students on strengthening digital defences.
- PAN-AFRICAN AIS Conference 2025 (Ghana) – plenary panel on algorithmic authority vs. human oversight.
- Cybersecurity Indaba 2025 – panel discussion on academia–government–industry collaboration.
- AI Expo Africa 2025 – presenting research on deep learning for securing 5G networks.

Prof Mathonsi represents the excellence, innovation, and community-centered leadership that define the Faculty of ICT. His contributions, from cutting-edge research and international collaborations to student mentorship and national service, continue to strengthen the university's impact on the African and global digital landscape.

Driven by a passion for technological advancement and the empowerment of future ICT leaders, Prof Mathonsi remains a force propelling TUT toward a smarter, more secure, and more inclusive digital future.

A committed mentor and supervisor, Prof Mathonsi has guided 21 master's graduates, one doctoral graduate, and co-hosted two postdoctoral research fellows. He is widely trusted as an external examiner by leading institutions, including UCT, UKZN, DUT, CUT, UNISA, Wits, University of Zambia, and the University of Botswana. In addition, he serves the national research ecosystem as a DHET Engineering and Technology Sub-panel Reviewer (2025–2027).

Beyond his academic achievements, Prof Mathonsi is deeply engaged in community empowerment, digital skills development, and strengthening South Africa's cybersecurity landscape. In 2025, he led and contributed to several high-impact outreach projects, including cybersecurity awareness initiatives for schools, expert reviews for the Eswatini Higher Education Council, and participation in a TUT-led smart agriculture pilot deploying cameras and smart cow tags for livestock monitoring and farm security.



Shaping digital communication with purpose and precision, TUT's own Virginia Mapula Letshekga

Growing up in Brakpan on the East Rand of Johannesburg, Virginia Mapula Letshekga has learned the value of resilience, curiosity and the power of possibility early in life. These qualities have continued to define her journey. From a determined learner at JE Malepe High School to a respected Electronic Communication Specialist at the Tshwane University of Technology (TUT).

Virginia's academic path began at TUT in 2009, where she enrolled for a National Diploma in Information Technology (Web and Application Development). Her passion for technology and problem-solving propelled her to further complete a Baccalaureus Technologiae in the same field. This academic foundation became the launchpad for a career dedicated not only to ICT excellence but also to purposeful communication.

Her professional story started with Work Integrated Learning (WIL) at Griam Consulting, a formative experience that introduced her to real-world ICT environments. She then expanded her skills during an internship at The Innovation Hub, where she contributed to developing a new website for Matayo Biofuels. Her role also extended to Pulego Communications, where she worked as a Front-End Developer, supporting the organisation's online presence through website updates and maintenance.

These early experiences cemented her passion for formulating digital experiences that are both functional and impactful. In 2014, Virginia returned to the institution that shaped her, joining TUT as a student assistant in Electronic Communication. Her strong work ethic and commitment to excellence soon earned her a permanent appointment as an Electronic Communication Specialist. Virginia continues to thrive in this role at TUT in 2025.

In this capacity, Virginia ensures that staff and students stay informed through timely, accurate and accessible communication. Her work spans the full spectrum of digital platforms, from the university website and email communication to urgent SMS alerts and content management for both staff and student portals. She plays a pivotal role in supporting all faculties, including the Faculty of ICT, by publishing news articles, events, notices, and essential updates that keep the university community connected and empowered.

Driven by her involvement in diverse digital communication projects, Virginia pursued further development in Project Management, gaining strategic insight into leading projects with greater structure and effectiveness. She also completed the Women in Leadership Programme, an experience she describes as transformative in strengthening her confidence, enhancing her leadership presence and helping her lead with empathy and clarity.

For Virginia, communication goes far beyond the simple sharing of information.

It is an act of service, she describes it as: "a way to build trust, strengthen relationships and ensure that every message has meaning and purpose".

Her journey demonstrates the value of dedication, continuous learning and the profound impact of thoughtful communication. As she continues to shape the digital landscape at TUT, Virginia remains committed to connecting people through information that matters, doing so with integrity, professionalism and heart.



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