Bassem SEDDIK (1 pager CV)

Actual profession: CEO of ViZmerald & Assistant prof.
Total Professional experience: 18 years
Age: 40,   **Nationality**: Tunisian

Mobile phone N°: +216 24 444 208
Marital situation: Married, 2 kids
Email: bassem.seddik@vizmerald.com

- Co- founder of ViZmerald startup: Quality inspection and Safety Solutions using IoT and AI for Industry 4.0,
- Strong Ph.D. background in computer vision and embedded AI for multimodal human actions recognition,
- Solid foundations in Web/mobile programming including C/C++/C#, OpenMP on CPU, Cuda on GPU,
- Long pedagogic experience teaching graphics programming, game engine and Robotics Vision,
- Attractive social, teamwork and leadership aptitudes.

Professional Experience

Sep. 2021 untill now

Founder & CTO of ViZmerald (Novation-City techno-park, Sousse, Tunisia)
- Fabric anomaly detection and marking using computer vision + robotics.
- Creation of the AmenAir connected helmet for workers protection.
- Design and concretization of a mechanical patent for a client.
- Creation of a multiplayer serious game for dental surgery simulation
- Creation of a Lora-based image transmission circuit

Sep. 2010 until now

University Technologist, then assistant professor (ISET Kairouan, ISET Sousse Tunisia)
- Teaching OpenMP and Cuda to Master's level students in Cloud computing
- Teach license and master degrees various courses related to multimedia, web development, computer vision, and high performance computing
- Establish and maintain university websites

Sep. 2020 to Aug. 2021

An international Information Technology consultant (ORSYS and M2i online teaching centers, France)
- Teaching the fundamentals of design patterns with Java/C# languages
- Teaching Fundamentals of the JavaScript and TypeScript languages

Sep. 2018 to Aug. 2021

Participation to mounting of 2 international and 3 national projects (Different universities consortiums, Mediterranean universities)
- A national VRR project for the concretization of an air filtering helmet,
- A national DGSE project for university the teaching improvement,
- An H20-20 project on collaborative Robots,
- An Erasmus+ capacity building project on Smart University,
- A national joint project on operators work assessment in textile industry

Jan. 2011 to May 2017

Thesis work (LATIS laboratory, ENISo, Sousse, Tunisia)
- Develop using the C/C++, C#, OpenCV, python, Matlab, and Visual Studio
- Develop a multimodal solution for the recognition of human actions
- Recognize the sign language actions
- Propose a multimodal implementation that improves the state of the art

Jul.-Aug. 2015

A collaboration Project with a Mechanics specialized Lab (LMS laboratory, ENISo, Sousse, Tunisia)
- Calibrate and control a Kuka robot to draw human faces on a white board
- Program graphically using the "GrassHopper" toolkit on "Rhino 3D"

Jan. to Apr. 2012

Professional R&D collaboration (NaoSecurity French company, Sousse, Tunisia)
- Visual recognition of specific 2D-barcodes using C++ and OpenCV,
- Assist, document and export process to Objective C for an IPhone version,

Sep 2006 to Aug 2010

Secondary School computer science teacher (Education ministry, Kef, Tunisia)
- Teach basics of algorithms and comp. sci. to kids up to Baccalaureate levels,

Education

- **Ph.D. in Computer Vision & AI**, 2017
- Research master's in Indus. Elec., 2009
- Bachelor (4years) in Inf. Tech., 2006

	Spoken	Written	Read
English	Very Good	Very Good	Very Good
French	Very Good	Very Good	Very Good
Arabic	Very Good	Very Good	Very Good
Italian	Good	Average	Average

Certifications

July 2021, Six Sigma Yellow Belt
January 2021, Solidworks 3D surfacing
Mai 2019, 98-381 MTA Python fundamentals
June 2018, 98-375 MTA HTML5 apps. dev.
January 2018, ALECSO Web Apps badge
March & April 2017, Online Trainer Badges
"Teaching with Moodle" "Planning Your Course"
March 2014, Stanford ML course
By Pr. Andrew Ng (Coursera online)
March 2011, Linux LPI Level I (101+102)
September 2010, Computer Technologist
success in the National examination
January 2009, IELTS academic Score
7.5/9 (Good user)

Publications

Scientific productions: (Google Scholar) (Research Gate)

- 1 impacted article
- 3 book chapters,
- 8 international conferences
- 2 national ones.

Scientific Participations:
- 3 competitions,
- 1 doctoral school,
- 2 organizer of international manifestations,
- 2 times IEEE Student branch head,

2 research stays: Polytech Nantes & Lab. Ex.

Studies:

Period	Study Level	Institutions
Feb. 2011 to May 2017	**Ph.D. in computer vision and machine learning** Subject : "Multimodal recognition of human-action streams:Application to sign language recognition" (Ph.D. manuscript)	National Engineering School of Sfax (ENIS), Tunisia
Sept. 2006 to Jan. 2009	**Research Masters** Subject: "Old documents image processing" (Master's manuscript)	Superior Institute in Applied Science and Technology of Sousse (ISSATSo), Tunisia
Sept. 2002 to Jun. 2006	**Bachelor: 4 years specialization in information technology** End-of-studies project : "3D scenes rendering improvement usingOpenGL" (Project manuscript)	ISSATSo, Tunisia
Sept. 1998 to Jun. 2002	**Collegial studies : Specialization in mathematics** (Tunisian "Baccalauréat" diploma at end of Secondary School)	Abdel Aziz Elbahi college, Sousse, Tunisia

Scientific productions, participations & competitions:

Publications & competitions

(Google Scholar) (Research Gate)

Conference/publication	Contribution	Ranking
Springer Books	June 2020: **Bassem Seddik** and Najoua Essoukri Ben Amara: "**Visual Methods for Sign Language Recognition: A Modality-Based Review**"	**Indexed Book Chapter**
Journal IET computer Vision	Impacted article in April 2017 : **Bassem Seddik**, Sami Gazzah, Najoua Essoukri Ben Amara: "*Human action recognition using a multi-layered fusion scheme of Kinect Modalities*"	**Cite Score 3.3 I.F. 1,95**
Conf. Int. ICIAR 2017, Montréal, Canada	Book chapter after conference oral communication : **Bassem Seddik**, Sami Gazzah, Najoua Essoukri Ben Amara: "*Hybrid Multi-modal Fusion for Human Action Recognition*"	**Class C + Book Chap.**
Conf. Int. ICIAP 2015, Genova, Italy	Book chapter after a conference poster: **Bassem Seddik**, Sami Gazzah, Najoua Essoukri Ben Amara: "*Modalities Combination for Italian Sign Language Extraction and Recognition*"	**Class B + Book Chap.**
Conf. Int. EUSIPCO 2015, Nice, France	Participation et présentation d'une communication orale : **Bassem Seddik,** Sami Gazzah, Najoua Essoukri Ben Amara: "*Hands, Face and Joints forMulti-modal Human-Action Temporal Segmentation and Recognition*"	**Class B**
Conf. Int. IPTA 2015, Orléan, France	Poster participation : Jassem Mansouri, **Bassem Seddik**, Sami Gazzah, Thierry Chateau: "*CoarseLocalization Using Space-Time and Semantic-Context Representations of Geo-referenced Video Sequences*"	IEEE International
Conf. Int. IPAS 2014, Hammamet, Tunisia	Particiapation and oral presentation: **Bassem Seddik,** Sami Gazzah, Thierry Chateau, Najoua Essoukri Ben Amara: "*Augmented Skeletal Joints for Temporal Segmentation of Sign Language Actions*"	IEEE International
Conf. Int. SSD 2013, Hammamet, Tunisia	Participation, reviewing and oral presentation: **Bassem Seddik,** Houda Mâamatou, Sami Gazzah, Thierry Chateau, N. E. Ben Amara: "*Unsupervised Facial Expressions Recognition and Avatar Reconstruction from Kinect*"	**IEEE International Highest cited**
Competition Int.: 3 Minutes Thesis, Nice, France 2015	Participation with a short paper and a 3-minutes communication: **Bassem Seddik**: "*Sign Language Recognition and Translation*" (3ème position)	International
Workshop IMOBS3, 2014 Visio-conference à Sousse	Participation to the workshop organization: (Website)	International
Conf. Int. CIFED 2008,	Participation with a poster paper: Hela Boulehmi, **Bassem Seddik**, Anis Kricha, Najoua Essoukri Ben Amara : "*Prétraitement de documents anciens*"	International
Conf. Int. AMINA 2008, Monastir–Tunisia	Participation and oral presentation: **Bassem Seddik**, Hela Boulehmi, Najoua Essoukri Ben Amara : " *Caractérisation d'images issues de documents anciens*"	International
Conf. Int. MELECON 2012, Hammamet, Tunisia	Animation of a stand relative to the "IEEE ENISo SB"	IEEE International
Conf. Nationale TJASSST 2011, Hammamet, Tunisia	Participation and oral presentation: **Bassem Seddik**, Chedlia Ben Kraiem, Sami Gazzah, Najoua Essoukri Ben Amara: "*Tracking of Human Body Parts in a Monocular Video Sequence*"	International
Journée Tunsianne de Rech.en Informatique, 2017	Participation with a poster summarizing the research work (Poster)	National
National conf. JWMU 2015, Djerba, Tunisia	Oral presentation of a developed application for ISET Kairouan **Bassem Seddik :** "*Application de gestion de la scolarité d'ISET Kairouan*" (Video)	National
Doctoral school CITA 2014, Gammart, Tunisia	Participation and poster presentation (Poster)	-

National competition Ma thèse en 180 sec., Kairouan, Tunisia	Oral communication: **Bassem Seddik**, Sami Gazzah, Najoua Essoukri Ben Amara: "*Reconnaissance et Translation de la langue des Signes*" (Winner of the public choice) (Attestation)	-
Competition Int. IEEE Xtreme, édition 8, 2014	Organize and participate to the IEEE-Xtreme-8 24 hours programming competition at the ENISo engineering school Ranked 25/100 nationally and 1255/2300 internationally (Video)	Reinforced coding skills
Doctoriales de l'université deManouba, Tunisia, 2013	Propose a durable development project for the region of Manouba : **Bassem Seddik *et al.* :** "*Vers le rapprochement de la recherche scientifique de son environnement socio-économique*" (Wining team) (Attestation)	-

International research stays:

Period	Work made	Organization
July 2013	**21 days**: Study of the application market for thesis work. The internshipallowed to: (Invitation) • Orient the thesis work towards sign language • Create a prototype application in Unity/C# dedicated to gesture recognition from Kinect (Videos)	Marketing department of Polytech de Nantes, France
January 2013	**30 days**: Focus on the shape-context descriptors for computer vision. Theinternship allowed to: • Compile C ++ sources under Windows and Linux for various descriptor extraction tools & Compare their performances)	Excellence Laboratory of Blaise Pascal de Clermont-Ferrand university, France (Invitation)

Manifestations and thematic days organized:

Expertise Tutoring Sessions Offered:

Period	Subject
Sep. 2015 to Jun. 2017	Teacher in charge of the Microsoft club of ISET Kairouan: Training in the creation and animation of "low poly" models for video games (Youtube) Introduction to C # programming and web services under .Net (Facebook page)
Every December from 2011 to 2016	Prepare and animate booths at the ENISO Business Convergence Forum (FCEE): Booths of the IEEE-SB association and booths of the LATIS laboratory (formerly SAGE research unit) (Facebook page)
May 2014	ISET Kairouan Industry Open Day: • Chair the organization of the IMTEC 2014 event • Organize the competition of the best PFE of ISET Kairouan Partner: United Nations Industrial Development Organization (ONUDI) (Website)
2011 à 2013	Founding member of the Free Software Promotion Club (CPULL) of ISET Kairouan: • Days of open-source software promotion • Day in collaboration with TUNADROID and Yasmine Martket (Facebook page)

Certifications et Badges:

1	Fully **Followed** the Unity certified 3D artist specialization in coursera	**Sep-June 2020**
2	Stanford Machine learning course by Andrew Ng (Coursera online certificate)	**March 2014**
3	Certification IELTS academic in English: Average Score 7.5/9 (Good user proof)	**January 2009**
4	Certification Linux LPI Level I: LPI 101 + LPI 102 (Link)	**March 2011**
5	Certification 98-375 MTA: HTML5 Application Development Fundamentals (link, pwd **B75F-s23L**)	**June 2018**
6	Badge ALECSO Web Apps (Link, pwd 2ryvdqg0_2)	**January 2018**
7	Online Trainer Badges: "Teaching with Moodle" and "Planning Your Course" from the Virtual University of Tunisia (Cycle 3 Badge) (Cycle 5 Badge)	**March-April 2017**

Professional experience and projects:

Period	Realized work	Organizations
12 hours - August 2020	**A professional training delivered on 2D/3D games programming on Unity:** 2D assets creation and UI programming, then their equivalent in 3D: Application to a roller game	Team Coworking space, Sousse, Tunisia
24 hours- June 2020	**A professional training delivered on JavaScript/TypeScript programming:** Online teaching of the SOPRA STEREA company employees on the JS and TS languages	ORSYS Formation, France

Period	Description	Institution
September 2018 to January 2020	**Participation to the mounting of 2 national projects** • A national project for SMART University establishment with a total of 700M Dinars allocated budget • A national joint research project on human operatorsworking assessment in the textile industry **Participation to the mounting of 2 international projects** • An H2020 project on collaborative Robots • An Erasmus+ capacity building project on Smart University	ISET Sousse (**JUST ACCEPTED**) A set of 5 national researchlaboratories National Engineering School of Sousse (ENISo), Tunisia ISET Sousse
Jan. 2011 to May 2017	**Thesis work:** • Multimodal solution for Human Actions Recognition • Recognize continuous sign language actions • Propose a robust implementation of offering higher speedthan the comparative literature methods • Develop using the C/C++, C#, OpenCV, python, Matlab, and Visual Studio under both Windows and Linux	LATIS laboratory, ENISo, Sousse, Tunisia (Laboratory website)
Jul.-Aug. 2015	**A collaboration Project with a Mechanics specialized Lab.:** • Calibrate and control a Kuka robot to draw the capturedhuman faces on a white board • Program graphically using the "GrassHopper" toolkit on "Rhino 3D" software to control the robot (PPT)	LATIS reseach lab. (ours) & LMS, ENISo, Sousse, Tunisia
From Sep. 2014 to Sep. 2017	**Website administrator of ISET Kairouan :** • Establish of the CMS Joomla template • Write articles, update Joomla components (Website) • Develop a PHP/MySQL-bases application (Video)	ISET Kairouan, Tunisia
Jan. to Apr. 2012	**Professional R&D collaboration :** Visual recognition of specific 2D-barcodes called "DmatCode" • Program in C++ and OpenCV under Visual Studio a functional DmatCode reading/encoding application • Assist an engineer in its implementation using the ObjectiveC language for an IPhone version • Produce a complete documentation report (Report)	NaoSecurity French company localized in Sousse, Tunisia
September 2011	**Professional collaboration : Design of the TEC1 Electric car :** • Draw the 2D concept art, • Design the complete 3D models for the inside and the outside of the TEC1 electrical car • Produce a demonstrative 3D animation (Video)	Private university of Sousse, Tunisia
Feb. to Jun. 2007	**Secondary school academic excellence project:** • Create an interactive CD teaching C++ language • Divide the contents into 9 chapters to an evaluation QUIZ • Write a synthesis report (Videos) (Report)	Regional education directionof the Kef, Tunisia
Feb. to Jun. 2006	**Graduation project (4 years) studies:** • Make an application to load 3D * .obj files and apply different shading algorithms using OpenGL • Program in C ++ with OpenGL and MFC (Project)	ISSAT Sousse, Tunisia
Déc. 2005 to Oct. 2006	**Work as a 2D / 3D graphic designer** • Sketch drawing, 2D graphics creation, • Model and animate in 3D for TV and documentaries, • Master 3Ds Max and Photoshop (Proof)	2D/3D production studioZaytoon Prod. Sousse, Tunisia

Teaching experience:

Period	Teachings	Institutions
Since Sep. 2010 till 2020	**Teaching for master's degree in cloud computing:** • GPU-based shared memory machines programming • Parallel CPU-based computing with OpenMP **Teaching for applied license in information technology:** • Offer students the theoretical foundations in multimediajn addition to information systems modeling • Specialize students in 2D/3D design and programming • Teach students how to program in C/C++, Android/Java, C#, PHP/Symfony/MySQL, HTML/CSS and JavaScript. • Make them familiar with software such as: Photoshop, Illustrator, Premiere, After Effects, Audition, Blender 3D	**From Sep. 2017**: Higher Institute of Technology of Sousse (ISET Sousse), Tunisia **Before**: Higher Institute of Technology of Kairouan (ISET Kairouan), Tunisia (YouTube channel) (Moodle (Key: ISETSousse))

2nd semester of 2014/15	Teaching students in master's degree "Infographics and IndustrialApplications" • Advanced theoretical foundations of infographics • 3D design for industry	ISSAT Kairouan, Tunisia
1st semesters of 2013/14 & 2014/15	Teaching the ENISo engineers the practical workshops of "Computer Vision" (Workshops website)	ENISo, Tunisia
2nd semester of 2009/10	Teaching the ENISo engineers the practical workshops of "J2EE-based Persistence Applications"	ENISo, Tunisia
Univ. years 2008 to 2010	Teaching for License students the lessons and practical workshopsof "Operating systems and Linux Bash programming"	ISIK Kef, Tunisia
Scholar years 2006 to 2010	**Teaching secondary-school students during 4 years** Basic skills in information technology	Regional education direction of the Kef, Tunisia

Within-company stays and visits:

Period	Realized tasks	Organizations
May 2015	**Industrial visit:** • Visit with the ISET students from Kairouan the Tunisian leader in 3D production CGS3D subcontractor of the Disney Channel series • Visit the stuios of the First TV channel: Green rooms, equipment, production, editing, archives, etc. • Visit the Audiovisual Training School IINA (Images)	Multiple audiovisual production companies in Tunis, Tunisia http://www.cgs3d.com
May 2011	**Industrial visit to the FAN 3D days in Nabeul:** • Participate with the students of the EIT of Kairouan by a stand of presentation for our productions • Attend the workshops provided by professionals in video games and 3D production • Discovered the Unity game engine	NetInfo 3D Training School, Nabeul, Tunisia
July 2006	**Masters research stay** : • Segment and rebuild 3D body members from MRI cuts Compile C ++ codes with VTK and QT libraries formedical applications	TIM laboratory of the university. of medicine of Monastir, Tunisia
July 2004	**Studies in-company productive internship** : • Maintenance and analysis of the digital resources for the Tunisian Post • Maintain and manage the IT services related to the local and distant networks of the Tunisian Post Document and create graphs (Attestation)	Information Pole of the Sousse Postal Office, Tunisia
Jun. and Jul. 2003	**Studies in-company initial internship** : Realization of CD-ROMsand interactive websites • Exploit and master the production tools Photoshop, Flash, Dreamweaver, Director and Frooty Loops Develop for the Web in PHP / MySQL, HTML, CSS, andJavaScript	ES2i Computer Company, Sousse, Tunisia

Languages:

	Spoken	Written	Read	Heard
English	*Very Good*	*Very Good*	*Very Good*	*Very Good*
French	*Very Good*	*Very Good*	*Very Good*	*Very Good*
Arabic (native)	*Very Good*	*Very Good*	*Very Good*	*Very Good*
Italian	*Good*	*Average*	*Average*	*Good*

Associative implication and interests:

Period	Subject
From 2012 to 2015	Member of the Scientific and Technological Association of ISET Kairouan, Tunisia
From 2010 to 2013	Founding member, then *Chair* of the *IEEE ENISo Student Branch* (ENISo SB)
Univ. year 2011/12	*AIESEC* association membership
Personal interests	Hand drawing and numeric art, basket-ball, music and hand-made gadgets.