

Khelifa Baizid

Ph.D., M.Sc., Eng., and Bachelor

Genova, ITALY | (0039)3511977816 | [Driving Licence B, EU permit of stay \(No Visa Required\)](#)

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Summary

An innovative and ambitious graduate with experience in Research and development in Robotics, Machine learning, Computer vision, Industrial robotics automation, Sensor fusion, Human robot interface, Multi-robot system, Programming, Mechanical engineering and knowledge of information engineering techniques. A good communicator and problem solver. Sound knowledge of various cultures and language skills including: English, French, Italian and Arabic

Professional experiences

Robotics Consultant

Logic Robotics Limited HONGKONG(<https://unodopo.com/products>)

- Development of a new delivery autonomous vehicle (mechanical)
- Development of an autonomous docking station for mobile robot
- Web control interface using ROS-bridge (control display and monitoring)
- ROS packages of communication with robots' IPC, mission planning, mapping, path planning, monitoring, etc.

Research and Developments

Italian Institute of Technology, Italy (<https://www.iit.it/>)

- Development of robotized industrial solution for companies
- Rapid prototyping from sketch to real model
- Writing patents, projects proposals for companies

Business Representative in Europe

2016 - 218

[GENERAL INDUSTRY & ENERGY, Algeria](#)

- Marketing, communication and international relationship
- Buying equipments and creating partnership

Post-doctoral

2015 - 2016

[Mines Telecom Douai, France](#)

- Conducting researches on SUCRÉ project (<http://car.mines-douai.fr/category/project/sucre/>)
- Developing applications and algorithms for autonomous control of multi-robot system
- Performing experiments using real robots such as Turtlebot and Robulab
- Inter robots coordination and cooperation between robots and humans (fireman)
- Writing scientific papers, project proposals and research reports
- Providing courses in computer science at the Mines-Telecom Institute of Douai

Research assistant

Jan 2013 - Dec 2014

[University of Cassino and Southern Lazio\(UNICAS\)](#)

- Research assistant: Conducting researches on ARCAS project(<http://www.arcas-project.eu>).
- Developing applications and algorithms of autonomous control of Unmanned Vehicle System equipped with manipulator.
- Development of CAVIS platform: Control software Architecture for cooperative multiple unmanned aerial Vehicle-manipulator Systems.
- Writing scientific papers, project proposals and research reports. Participating in international scientific research events.

Industrial



Manufacturing, rapid prototyping, industrial manipulators

Languages



French, English, Italian, Arabic

Other Skills



Windows, Linux (Ubuntu, Debian),
Latex and Microsoft Office
Environnement (Excel, Word,
PowerPoint, etc.)

CAD



3D Mechanical design and simulation
(3D/2D), SolidWorks and SolidWorks's
API, Catia V5.

Robots:



Turtlebot, NAO, Sputnik, Murphy and
Tumbler and StepOne (built in IIT),
NeoBotix, Erectus, quadrotor

Robotics



Design and Control, Autonomy,
Human-robot-interaction, Co-
operation, Navigation, Path planning,
Active Contour Model

Programing



Visual C++, C, C#, Python, Matlab,
Visual Basic, Visual Basic for
Applications and Object-oriented
Programming, ROS, Microsoft Robotics
Development Studio, Webots, OpenCV,
OpenGL, QT

Postdoctoral

Jan 2012 - Dec 2012

[Brno University of Technology \(BUT\), Czech Republic](#)

Postdoctoral:

- Conducting researches on SRS(<http://srs-project.eu>) and R3-Cop(<http://www.r3-cop.eu>) projects.
- Developing applications and algorithms about autonomous navigation, path planning and human-robot interaction.
- Participating in PhD students supervision. Writing scientific papers, project proposals and research reports.

Fellowship

Jan 2011 - Dec 2011

[Italian Institute of Technology\(IIT\)](#)

Fellowship:

- Conducting researches for Multi-Robots System group for surveillance. Developing simulation about industrial robotics.
- Developing applications and algorithms for multi-robots tasks(e.g., Rescue).
- Participating in supervision of PhD students.
- Installing equipment of laboratory. Writing scientific papers and research.

3D/2D CAD Designer

Sep 2007 - Dec 2007

[Société de conception et réalisation de moules et des outillages industriels](#)

3D/2D Designer:

- Performing design and analysis of industrial assemblies and parts, and generate 2D drafts.
- Performing 3D assemblies in industrial plant: Generating 2D draft of assemblies' components:Performing simulation techniques and testing using API: Managing CAD data exchange
- Participating in trainings organized by the company, e.g. 3D design training using CATIA Software(INCAT FRANCE, Agence de Strasbourg)

Assistant Teacher

Mar 2007 - Jul 2007

National Institute Specialized in Professional Training (INSFP)

Assistant Teacher:

- Teaching undergraduate technician students in Computer Science course
- Co-ordinate and supervise technician students
- Developing exercises and examinations.

Assistant Teacher

Mar 2007 - Jul 2007

Private school CONDOC and ALCADWorks Company

Assistant Teacher:

- *Giving CAD courses to undergraduate engineering Students and Employees; 3D parts and assemblies modeling of industrial products; 2D draft*
- *Giving courses about computer science*

Training

PHD Doctorate

Jan 2008 - May 2011

[Italian Institute of Technology and University of Genova](#)

- The aim of this project is to integrate and develop the control schemes of heterogynous robots in the same tele-operation platform (ViRAT) [1] based on several concepts like: Information fusion, Co-operation, Human-Robot Interaction (HRI) and so on. The aim of this platform was to simplify the interaction between human and group of robots to achieve high level tasks in autonomous manner.
- Performing research on concepts and methods.

- Developing control schemes and individual capabilities for each robot's type (actions, motions, head moving, vision, etc).
- Developing common algorithms like: path planning, navigation, co-operation schemes, detections etc.
- Designing a human robot interaction interface (tools, methods).
- Developing simulation techniques and testing.
- Attending scientific courses.
- Reviewing research papers for international research events.
- Participant in international scientific research events (IASTED RA2009, ICIRA 2009, Robio 2009, VRIC 2010, IASTED MS2010, IROS 2010).

Magister degree (5+2)

Oct 2004 - Feb 2007

[Polytechnic Military School](#)

Robotics and Industrial Computer Science, Mechanical Robotized System:

- The aim was developing platform of industrial robotics simulation, named IROSim, using SolidWorks's API and Oriented Object Programming (Visual Basic) in order to simulate industrial tasks process of robotized cells.
- Developing of the GUI design, robots and its environment
- Developing algorithms and concepts of the platform (Modeling, Optimization of the task using stochastic methods etc.)
- Performing the Spot Welding industrial task optimization
- Performing practical courses of Strength of materials

Engineer degree

Jan 2001 - Jul 2004

[University of m'hamed bougara boumerdes](#)

Mechanical Engineering and Manufacturing

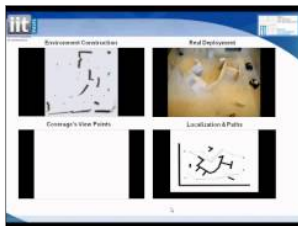
Bachelor degree

Sep 1998 - Jul 2001

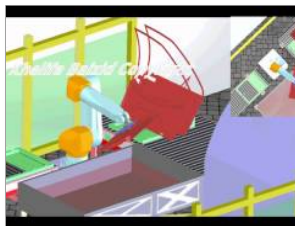
[University of m'hamed bougara boumerdes](#)

Mechanical Engineering and Manufacturing

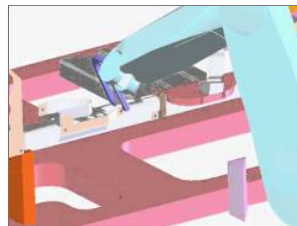
LINKS TO SOME OF MY VIDEOS:



Coverage



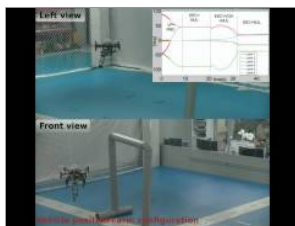
Manipulation task (IROSi...



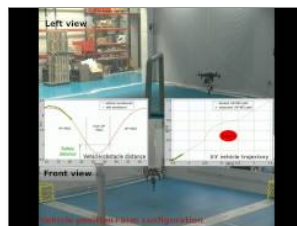
Spot-welding



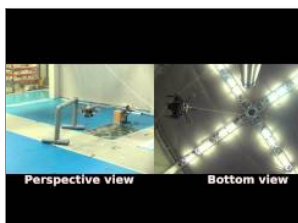
Sputnik and Erectus co-or...



Tracking and avoiding rea...



Vehicle obstacle avoidanc...



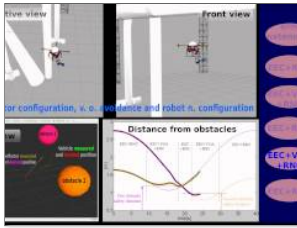
6 Vehicle position + vehicl...



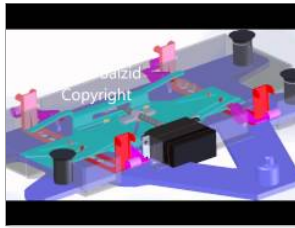
End effector configuration...



End effector configuration...



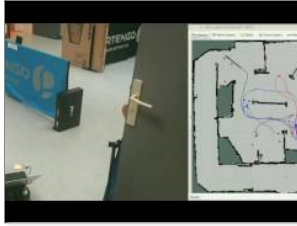
Simulation based on ROS ...



A Gripper for robot manip...



Co-operating with ARCAS ...



Publications

Published:

1. K. Baizid, G. Iozenguez, L. Febresse, N. Bouraqadi, "Vevtor Maps: Lighweight and Accurate Map Format for Multi-Robot System" *9th International Conference of Intelligent Robotics and Applications*, 2016, (**BEST PAPER AWARD**).
2. K. Baizid, G. Giglio, F. Pierri, M. A. Trujillo, G. Antonelli, F. Caccavale, A. Viguria, S. Chiaverini and A. Ollero, "Behavioral Coordinated Control of Unmanned Aerial Vehicle Manipulator Systems: Simulations and Real Experiments" *Autonomous Robots Journal Spring*, pp. 118, Doi 10.1007/s10514-016-9590-0.
3. K. Baizid, S. Cukovic, J. Iqbal, A. Yousnadj, R. Chellali, A. Meddahi, G. Devedzic, I. Ghionea, IROSim: Industrial robotics simulation design planning and optimization platform based on cad and knowledgware technologies, *Journal of Robotics and Computer-Integrated Manufacturing [RCIM]*, Vol.42, No.-, pp. 121134, ISSN 0736-5845, Doi 10.1016/j.rcim.2016.06.003, 2016.
4. K. Baizid, A. Meddahi, A. Yousnadj, S. Cukovic, R. Chellali, "Industrial Robotics Simulation Design Planning and Optimization Platform based on Off-line CAD Programing" *International Conference on Robotics and Arificial Intelligence (ICRAI2016)*, HELD IN: Los Angelos, USA Apr. 2016, (MERGED WITH THE PROCEEDING OF THE International Conference on Industrial Engineering and Applications (ICIEA 2016)). (**BEST PAPER AWARD**).
5. K. Baizid, G. Giglio, F. Pierri, M. A. Trujillo, G. Antonelli, F. Caccavale, A. Viguria, S. Chiaverini and A. Ollero, "Experiments of Behavioral Coordinated Control of Unmanned Aerial Vehicle Manipulator Systems" *International Conference on Robotics and Automation (ICRA 2015)*.
6. K. Baizid, A. Yousnadj, A. Meddahi, R. Chellali, J. Iqbal, "Time Scheduling and Optimization in Industrial Robotized Tasks Based on Genetic Algorithms" *Robotics and Computer-Integrated Manufacturing journal (RCIM)*, 25-Apr. 2015.
7. H. Khan, J. Iqbal, K. Baizid, T. Zielinska, "Longitudinal and lateral slip control of autonomous wheeled mobile robot for trajectory tracking" *Journal of Zhejiang University Science (Computers and Electronics)*, Springer 31 Jan. 2015.
8. S. Cukovic, G. Devedzic, F. Pankratz, K. Baizid, I. Ghionea4, A. Kostic, "Augmented Reality Simulation of CAM Spatial Tool Paths in Prismatic Milling Sequences" *12th International Conference on Product Lifecycle Management*, Doha (Qatar), Oct. 1921, 2015.
9. S. Cukovic, M. Gattullo, F. Pankratz, G. Devedzic, E. Carrabba, K. Baizid, "Marker Based vs. Natural Feature Tracking Augmented Reality Visualization of the 3D Foot Phantom" *The International Conference on Electrical and Bio-medical Engineering, Clean Energy and Green Computing (EBCEGC2015)*, Dubai, United Arab Emirates, Jan. 28-30, 2015, pp. 24-31, ISBN 978-1-941968-06-2.
10. J. Iqbal and K. Baizid, "Stroke rehabilitation using exoskeleton-based robotic exercisers: Mini Review" *Biomedical Research journal* Vol(26) Issue 1, pp. 197-201. 2014.
11. M. I. Ullah, S. A. Ajwad, K. Baizid and J. Iqbal, "A comprehensive state-of-the-art on control of industrial robotic manipulators" *Journal of the Balkan Tribological Association* (Paper 1157/26.08.20014).
12. R. Chellali, K. Baizid, "Multi-Robots Coverage Approach" *IEEE Symposium on Robotic*

Intelligence in Informationally Structured Space (RiiSS) 09-12 Dec. 2014, Florida, UAS.

13. G. Antonelli K. Baizid F. Caccavale F. Pierri G. Giglio G. Muscio, "Control Software Architecture for Cooperative Multiple Unmanned Aerial Vehicle-Manipulator Systems" *Journal of Software Engineering for Robotics*, 2014.

14. K. Baizid, A. Yousnadj, A. Meddahi, R. Chellali, H. Khan, J. Iqbal, "Robotized Task's Time Scheduling and Optimization Based on Genetic Algorithms for non redundant Industrial Manipulators" *IEEE Robotics and Sensor Environment (ROSE)*, 16-18 Oct. 2014.

15. K. Baizid, R. Chellali, R. Luza, B. Vitezslav and F. Arrichiello, "RRS: Rapidly-exploring Random Snakes a New Method for Mobile Robot Path Planning" *International Conference on Intelligent Autonomous Systems*, Padova, Italy, IAS 2014.

16. K. Baizid F. Caccavale, S. Chiaverini, G. Giglio and F. Pierri "Safety in Coordinated Control of Multiple Unmanned Aerial Vehicle Manipulator Systems: Case of Obstacle Avoidance" *22nd Mediterranean Conference on Control and Automation*, Palermo, Italy, MED 2014.

17. G. Antonelli K. Baizid F. Caccavale F. Pierri G. Giglio G. Muscio, "CAVIS: a Control software Architecture for cooperative multi-unmanned aerial Vehicle-manipulator Systems" *19th World Congress of the International Federation of Automatic Control*, IFAC, 2014.

18. J. Iqbal, S.M. Pasha, K. Baizid, A.A. Khan and J. Iqbal, "Computer vision inspired real-time autonomous moving target detection, tracking and locking" *Life Sci. Journal - Acta Zhengzhou University Overseas Edition* 2013; 10(4): 3338-3345.

19. K. Baizid, Ryad Chellali and Traveler Hauptman, "ViRAT an Advanced Multi-robots Platform" *IEEE International Conference on Industrial Electronics and Applications (ICIEA)*, pp. 551-556, Jul. 18-20, Singapore, 2011.

20. R. Chellali, B. Emmanuel, K. Baizid, M. Zaoui, "Interface for multi-robots based video coverage" *14th International Conference on Human-Computer Interaction (HCI2011)*, pp. 203-210, Jul. 9-14, 2011, Florida, USA.

21. R. Chellali, K. Baizid, "What Maps And What Displays For Remote Situation Awareness And Rov Localization" *14th International Conference on Human-Computer Interaction (HCI2011)*, pp. 364-372, Jul. 9-14, 2011, Florida, USA.

22. Meddahi A., Chellali R. and K. Baizid, "Multi-Objective Control through Evolutionary Neuro-Controller for Interactive Mobile Robot Manipulator" *IEEE International Conference on Robotics and Biomimetics (ROBIO2011)*, pp. 2914-2918, Dec. 7-11, 2011, Phuket, Thailand.

23. K. Baizid, R. Chellali, Ali yousnadj, Amal Meddahi and Bentaleb Toufik, "Genetic Algorithms Based Method for Time Optimization in Robotized Site" *IEEE/RSJ International Conference on Intelligent Robots and System (IROS2010)*, pp. 1359-1364, Oct. 18-22, 2010, Taiwan.

24. K. Baizid, R. Chellali, A. yousnadj, A. Meddahi, B. Toufik and J. Iqbal, "Modelling of Robotized Site and Simulation of Robots Optimum Placement and Orientation Zone" *21th Modelling and Simulation*, pp. 09-16, Jul. 15-17, 2010, Canada.

25. K. Baizid, R. Chellali, T. Bentaleb, A. Yousnaj and A. Meddahi, "Virtual Reality Based Tool for Optimal Robot Placement in Robotized Site Based on CADs Application Programming Interface" *Proceedings of Virtual Reality International Conference (VRIC2010)*, PP. 55-56, Apr. 7-9, 2010, Laval, France.

26. T. Bentaleb, K. Baizid, A. Meddahi, and H. Hammache, "Workspace, Accuracy Analysis and Kinematic Calibration of a Parallel Robot Delta" *Proceedings of 2010 IEEE International Workshop on Robotic and Sensors Environments (ROSE2010)*, 15-16 Oct. 2010, Phoenix, Arizona, USA.

27. R. Chellali, K. Baizid, Li Zhao and Nicolas Mollet, "2D and 3D virtual environment for human robot interaction: from virtual perception to real localization" *IEEE International Conference on Robotics and Biomimetic (ROBIO2009)*, PP. 694-699, Dec. 18-22, 2009, China.

28. A. Meddahi, K. Baizid, Ali yousnadj and J. Iqbal, "API Based Graphical Simulation of Robotized Sites" *IASTED International Conference on Robotics and Applications (RA 2009)*, pp 485-492, Nov. 2-4, 2009, Cambridge, Massachusetts, USA.

29. A. Rezoug, A. Meddahi, K. Baizid, M. Hamerlain and M. Tadjine, "Fuzzy Logic Controller For a Pneumatic Artificial Muscle Robot Based on Sliding Mode Montrol" *IASTED International Conference on Robotics and Applications (RA 2009)*, pp. 74- 81, Cambridge, Massachusetts, USA, Nov 2 4, 2009.

30. K. Baizid, L. Zhao, N. Mollet, R. Chellali, "Human Multi-Robots Interaction with High Virtual Reality Abstraction Level", *Proc. of 2nd Int. Conf. on Intelligent Robotics and Applications (ICIRA 2009)*, pp. 23-32, Dec. 16-18, 2009, Singapore.

31. N. Mollet, L. Giulio Brayda, K. Baizid and Chellali Ryad. "Standardization and integration in robotics: case of virtual reality tools" *Int. IEEE Cyberworlds*, pp. 525-530,

Sep. 2008.

32. K. Baizid, Ali Yousnadj, "Simulation graphique dun processus daccessibilit de sites robotis sous un environnement 3D" *Sminaire International de Systems Numriques embarqus (SISNE)*, Apr. 2008, EMP, Algeria.

