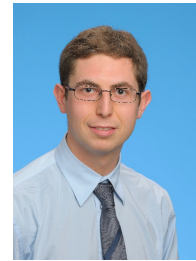


Carmelo Mineo
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Electronic And Electrical Engineering
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Personal Statement

Dr Carmelo Mineo joined CUE in 2012 to undertake a PhD in Automated Non-Destructive Inspection of Large and Complex Geometries of Composite Materials. He became a member of staff as a research associate in July 2015. He has been a research fellow since February 2018.

Carmelo graduated with a MEng in Mechanical Engineering from the University of Palermo (Italy) in the autumn of 2011, where he undertook research projects in areas such as non-destructive evaluation, laser ultrasound and characterization of wave propagation with experimental and numerical studies.

Qualifications

Doctor of Philosophy, University Of Strathclyde
1 Jul 2012 → 30 Jun 2015

Master of Engineering, Universita' degli Studi di Palermo
2009 → 2011

Bachelor of Engineering, Universita' degli Studi di Palermo
2006 → 2009

Employment

Research Fellow

Electronic And Electrical Engineering
University Of Strathclyde
United Kingdom
1 Jul 2015 → present

Research output

Ultrasonic phased array inspection of a wire plus arc additive manufactured (WAAM) sample with intentionally embedded defects

Javadi, Y., MacLeod, C. N., Pierce, S. G., Gachagan, A., Lines, D., Mineo, C., Ding, J., Williams, S., Vasilev, M., Mohseni, E. & Su, R., 22 Jul 2019, (Accepted/In press) In : Additive Manufacturing.

Robotic geometric and volumetric inspection of high value and large scale aircraft wings

Mineo, C., MacLeod, C. N., Su, R., Lines, D., Davi', S., Cowan, B., Pierce, S., Paton, S., Munro, G., McCubbin, C. & Watson, D., 20 Jun 2019. 5 p.

Adapting robot paths for automated NDT of complex structures using ultrasonic alignment

Riise, J., Mineo, C., Pierce, S. G., Nicholson, P. I. & Cooper, I., 8 May 2019, In : AIP Conference Proceedings. 2102, 1, 9 p., 040006.

Smart sensing and adaptive reasoning for enabling industrial robots with interactive human-robot capabilities in dynamic environments - a case study

Zabalza, J., Fei, Z., Wong, C., Yan, Y., Mineo, C., Yang, E., Rodden, T., Mehnen, J., Pham, Q. C. & Ren, J., 18 Mar 2019, In : Sensors. 19, 6, 23 p., 1354.

Ultrasonic phased array inspection of wire + arc additive manufacture samples using conventional and total focusing method imaging approaches

Javadi, Y., MacLeod, C. N., Pierce, S. G., Gachagan, A., Kerr, W., Ding, J., Williams, S., Vasilev, M., Su, R., Mineo, C. & Dziejewicz, J., 1 Mar 2019, In : Insight: Non-Destructive Testing and Condition Monitoring. 61, 3, p. 144-148 5 p.

A probabilistic compressive sensing framework with applications to ultrasound signal processing

Fuentes, R., Mineo, C., Pierce, S. G., Worden, K. & Cross, E. J., 15 Feb 2019, In : Mechanical Systems and Signal Processing. 117, p. 383-402 20 p.

Novel algorithms for 3D surface point cloud boundary detection and edge reconstruction

Mineo, C., Pierce, S. G. & Summan, R., 31 Jan 2019, In : Journal of Computational Design and Engineering. 6, 1, p. 81-91 11 p.

Low cost three-dimensional virtual model construction for remanufacturing industry

Siddiqi, M. U. R., Ijomah, W. L., Dobie, G. I., Hafeez, M., Pierce, S. G., Ion, W., Mineo, C. & MacLeod, C. N., 2 Oct 2018, In : Journal of Remanufacturing. 11 p.

Enhancing the sound absorption of small-scale 3D printed acoustic metamaterials based on Helmholtz resonators

Casarini, C., Tiller, B., Mineo, C., MacLeod, C. N., Windmill, J. F. C. & Jackson, J. C., 1 Oct 2018, In : IEEE Sensors Journal. 18, 19, p. 7949-7955 7 p.

Ultrasonic phased array inspection of wire plus arc additive manufacture (WAAM) samples using conventional and total focusing method (TFM) imaging approaches

Javadi, Y., MacLeod, C. N., Pierce, S., Gachagan, A., Kerr, W., Ding, J., Williams, S., Vasilev, M., Su, R., Mineo, C. & Dziejewicz, J., 12 Sep 2018. 12 p.

Enabling robotic adaptive behaviour capabilities for new industry 4.0 automated quality inspection paradigms

Mineo, C., Vasilev, M., MacLeod, C. N., Su, R. & Pierce, S. G., 10 Sep 2018, p. 1-12. 12 p.

Off-line scan path planning for robotic NDT

Morozov, M., Pierce, S. G., MacLeod, C. N., Mineo, C. & Summan, R., 31 Jul 2018, In : Measurement. 122, p. 284-290 7 p.

Making industrial robots smarter with adaptive reasoning and autonomous thinking for real-time tasks in dynamic environments: a case study

Zabalza, J., Fei, Z., Wong, C., Yan, Y., Mineo, C., Yang, E., Rodden, T., Mehnen, J., Pham, Q-C. & Ren, J., 7 Jul 2018, p. 1-10. 10 p.

Multi-aperture beamforming for automated large structure inspection using ultrasonic phased arrays

Su, R., Mineo, C., MacLeod, C. N., Pierce, S. G. & Gachagan, A., 17 May 2018, (Accepted/In press) *45th Annual Review of Progress in Quantitative Nondestructive Evaluation*. Melville, NY.

Intentional weld defect process: from manufacturing by robotic welding machine to inspection using TFM phased array

Javadi, Y., Vasilev, M., MacLeod, C. N., Pierce, S. G., Su, R., Mineo, C., Dziejewicz, J. & Gachagan, A., 15 May 2018, (Accepted/In press) *45th Annual Review of Progress in Quantitative Nondestructive Evaluation*. Melville, NY., 077

Index based triangulation method for efficient generation of large three-dimensional ultrasonic C-scans

Mineo, C., Riise, J., Summan, R., MacLeod, C. N. & Pierce, S. G., 1 Apr 2018, In : Insight: The Journal of the British Institute of Non-Destructive Testing. 15 p.

Low cost three-dimensional virtual model construction for remanufacturing industry

Siddiqi, M. UR., Ijomah, W. L., Dobie, G. I., Hafeez, M., Pierce, S. G., Ion, W., Mineo, C. & MacLeod, C. N., 26 Oct 2017. 9 p.

Compressive sensing for direct time of flight estimation in ultrasound-based NDT

Fuentes, R., Worden, K., Antoniadou, I., Mineo, C., Pierce, S. G. & Cross, E. J., 12 Sep 2017. 12 p.

Introducing a new method for efficient visualization of complex shape 3D ultrasonic phased-array C-scans

Mineo, C., Summan, R., Riise, J., MacLeod, C. N. & Pierce, S. G., 7 Sep 2017. 4 p.

Introducing a novel mesh following technique for approximation-free robotic tool path trajectories

Mineo, C., Pierce, S. G., Nicholson, P. I. & Cooper, I., 31 Jul 2017, In : Journal of Computational Design and Engineering. 4, 3, p. 192-202 11 p.

A novel visual pipework inspection system

Summan, R., Jackson, W., Dobie, G., MacLeod, C. N., Mineo, C., West, G., Offin, D., Bolton, G., Marshall, S. & Lille, A., 16 Jul 2017. 8 p.

A new probe concept for internal pipework inspection

Summan, R., Mathur, N., Dobie, G., West, G., Marshall, S., MacLeod, C., Mineo, C. & Pierce, G., 15 Jun 2017, *Nuclear Plant Instrumentation, Control, and Human-Machine Interface Technologies (NPIC&HMIT 2017)*. La Grange Park, Ill.

Mosaicing for automated pipe scanning

Summan, R., Mathur, N., Dobie, G., West, G., Marshall, S., Mineo, C., MacLeod, C. N., Pierce, S. & Kerr, W., 24 Nov 2016. 20 p.

Fast ultrasonic phased array inspection of complex geometries delivered through robotic manipulators and high speed data acquisition instrumentation

Mineo, C., MacLeod, C., Morozov, M., Pierce, S. G., Lardner, T., Summan, R., Powell, J., McCubbin, P., McCubbin, C., Munro, G., Paton, S., Watson, D. & Lines, D., 3 Nov 2016, *2016 IEEE International Ultrasonics Symposium (IUS)*. [New York]: IEEE, 4 p.

Assessing the accuracy of industrial robots through metrology for the enhancement of automated non-destructive testing

Morozov, M., Riise, J., Summan, R., Pierce, S. G., Mineo, C., MacLeod, C. N. & Brown, R. H., 18 Jul 2016, (Accepted/In press). 6 p.

Flexible integration of robotics, ultrasonics and metrology for the inspection of aerospace components

Mineo, C., MacLeod, C., Morozov, M., Pierce, S. G., Summan, R., Rodden, T., Kahani, D., Powell, J., McCubbin, P., McCubbin, C., Munro, G., Paton, S. & Watson, D., 16 May 2016, (Accepted/In press).

Robotic path planning for non-destructive testing - a custom MATLAB toolbox approach

Mineo, C., Pierce, S. G., Nicholson, P. I. & Cooper, I., 29 Feb 2016, In : Robotics and Computer Integrated Manufacturing. 37, p. 1-12 12 p.

Conformable eddy current array delivery

Summan, R., Pierce, G., MacLeod, C., Mineo, C., Riise, J., Morozov, M., Dobie, G., Bolton, G., Raude, A., Dalpé, C. & Braumann, J., 10 Feb 2016, *42nd Annual Review Of Progress In Quantitative Nondestructive Evaluation: Incorporating the 6th European-American Workshop on Reliability of NDE*. Chimenti, D. E. & Bond, L. J. (eds.). Melville, NY., Vol. 1706. 8 p. 170003. (AIP conference proceedings; vol. 1706).

Robotic path planning for non-destructive testing through RoboNDT

Mineo, C., Pierce, S. G., Riise, J., Nicholson, P. I. & Cooper, I., 10 Sep 2015.

Rapid inspection of composite and additive manufactured components using advanced ultrasonic techniques

Cooper, I., Mineo, C., Wright, B., Freemantle, R., Nicholson, P. I. & Liaptsis, D., 12 May 2015.

PAUT inspection of complex shaped composite materials through 6 DOFs robotic manipulators

Mineo, C., Pierce, S. G., Wright, B., Cooper, I. & Nicholson, P. I., Mar 2015, In : Insight: The Journal of the British Institute of Non-Destructive Testing. 57, 3, 6 p.

Development of a fast inspection system for complex aerospace structure

Cooper, I., Nicholson, I., Liaptsis, D., Wright, B. & Mineo, C., 14 Nov 2014, *6th International Symposium on NDT in Aerospace*. Madrid (Spain), 1 p.

Robotic path planning for non-destructive testing of complex shaped surfaces

Mineo, C., Pierce, S. G., Nicholson, P. I. & Cooper, I., Jul 2014, *E-Book of Abstracts, 41st Annual Review of Progress in Quantitative Nondestructive Evaluation Conference*. Boise (USA)

The development of a fast inspection system for complex aerospace composite structure

Cooper, I., Nicholson, P. I., Liaptsis, D., Mineo, C. & Wright, B., 18 Jun 2014.

Numerical study for a new methodology of flaws detection in train axles

Mineo, C., Cerniglia, D. & Pantano, A., 31 Mar 2014, In : *Ultrasonics*. 54, 3, p. 841–849 9 p.

Development of a fast inspection system for aerospace composite materials - the IntACom project

Cooper, I., Nicholson, I., Yan, D., Wright, B., Liaptsis, D. & Mineo, C., 13 Nov 2013. 9 p.

Surface waves on cylindrical solids: numerical and experimental study

Mineo, C., Cerniglia, D. & Pantano, A., 30 Apr 2013, In : *Ultrasonics*. 53, 4, p. 913–921 9 p.

Robotic non-destructive inspection

Mineo, C., Herbert, D., Pierce, S., Morozov, M., Nicholson, I. & Cooper, I., Feb 2013, *51st Annual Conference of the British Institute of Non-Destructive Testing 2012 (NDT 2012): Proceedings of a meeting held 11-13 September 2012, Northamptonshire, UK*. Red Hook

Computer-aided tool path generation for robotic non-destructive inspection

Morozov, M., Pierce, S., Mineo, C., Nicholson, P. I. & Cooper, I., 2013, *52nd Annual Conference of the British Institute of Non-Destructive Testing 2013: NDT 2013*. Telford (UK)

Development of a fast inspection system for aerospace composite materials - the IntACom project

Cooper, I., Nicholson, P. I., Yan, D., Wright, B. & Mineo, C., 2013, *9th International Conference on Composite Science and Technology (ICCST-9): Composite Science and Technology: 2020 - Scientific and Technical Challenges*. 9 ed. Italy

Influence of laser beam profile on the generation of ultrasonic waves

Cerniglia, D., Pantano, A. & Mineo, C., 31 Dec 2011, In : *Applied Physics A: Materials Science and Processing*. 105, 4, p. 959–967 9 p.

Studio numerico e sperimentale sulla generazione degli ultrasuoni tramite sorgente laser puntiforme

Cerniglia, D., Pantano, A. & Mineo, C., 7 Sep 2011.

Activities

Seminar and demos on Robotically Enabled Sensing and novel robot control for dynamic environments

Carmelo Mineo (Consultant)

12 Mar 2019 → 14 Mar 2019

Autonomous Systems Lab, Institute of Robotics & Intelligent Systems, ETH Zurich

Gareth Pierce (Visiting researcher), Charles Norman MacLeod (Visiting researcher), Gordon Dobie (Visiting researcher), Carmelo Mineo (Visiting researcher), Robert James Watson (Visiting researcher)

20 Nov 2018

Organiser for Factory 2050/ KUKA advanced robot programming workshop

Gareth Pierce (Organiser), Charles Norman MacLeod (Participant), Carmelo Mineo (Participant), Guenter Schreiber (Participant), Alan Oakley (Participant), Ben Morgan (Participant), Chris Greaves (Participant), Ben Fisher (Participant), Adrian Hirst (Participant), Phil Kitchen (Participant), Craig Ashmore (Participant), Steve Hudson (Participant)

6 Jun 2018

Shanghai University

Carmelo Mineo (Visiting researcher)
24 Apr 2018 → 25 Apr 2018

Novel data visualisation approaches for ultrasonic inspection of complex geometries

Carmelo Mineo (Speaker)
22 Apr 2018

Sigrid Brell-Cokcan

Carmelo Mineo (Host)
19 Mar 2018 → 20 Mar 2018

RWTH Aachen University

Carmelo Mineo (Visiting researcher)
18 Dec 2017

Faculty Robotics and Automation Users Group Discussion

Gareth Pierce (Organiser), Alan Oakley (Participant), Dimitris Drikakis (Participant), Deepak Uttamchandani (Participant), William Ion (Participant), Xiu Yan (Participant), Erfu Yang (Participant), Massimiliano Vasile (Participant), Malcolm Macdonald (Participant), P J Rowe (Participant), Marcus Perry (Participant), Charles Norman MacLeod (Participant), Gordon Dobie (Participant), Daniel McMahon (Participant), Stephen Marshall (Participant), Mark Post (Participant), Lykourgos Petropoulakis (Participant), Carmelo Mineo (Participant), Gaetano Di Caterina (Participant), David Harle (Participant), Walter Michie (Participant), Robert Stewart (Participant), Janine de fence (Participant), Stephen McArthur (Participant), Alexander Galloway (Participant), Daryl Landeg (Participant), Atilla Incecik (Participant), Campbell Booth (Participant), Andrew Heyes (Participant), Alexander Duffy (Participant), Zoe Shipton (Participant), Anthony Gachagan (Participant), Remi Christophe Zante (Participant), Tony Rodden (Participant), Rahul Summan (Participant), Graham Wren (Participant)
10 Oct 2017

Prizes

BINDT John Grimwade Medal

Carmelo Mineo (Recipient), 13 Sep 2016

Bob Service Award 2018

Carmelo Mineo (Recipient), 26 Jan 2018

Knowledge Exchange Award

Carmelo Mineo (Recipient), Gareth Pierce (Recipient) & Charles Norman MacLeod (Recipient), 2016

Awards

AFRC_DIRF_700

Pierce, G., Gachagan, A., Ion, W., MacLeod, C. N., Mineo, C. & Ridgway, K.
Spirit Aerosystems (Europe) Ltd: £837,094.00
1/07/17 → 30/06/19

Projects

AFRC_DIRF_700

Pierce, G., Gachagan, A., Ion, W., MacLeod, C. N., Mineo, C. & Ridgway, K.
Spirit Aerosystems (Europe) Ltd
1/07/17 → 30/06/19

Automated Defect Free Fusion Welding (ADFFW) (2015) - HVM Catapult

MacLeod, C. N., Dobie, G., Pierce, G., Summan, R. & Mineo, C.

7/12/15 → 31/03/16

Consultancy for National Nuclear Laboratory

Mineo, C.

National Nuclear Laboratory NNL

Flexible and Intelligent Path Planning and Control of Industrial Robots towards Autonomous Hot Forging in the Digital Manufacturing Age

Yang, E., Mehnen, J., Mineo, C. & Rodden, T.

1/09/17 → 31/03/18

Flexible and Intelligent Path Planning and Control of Industrial Robots towards Autonomous Hot Forging in the Digital Manufacturing Age

Yan, Y., Mineo, C., Yang, E., Mehnen, J., Zabalza, J., Fei, Z. & Wong, C.

1/09/17 → 31/03/18

Impacts

Datasets

RoboNDT software

Mineo, C. (Creator), University of Strathclyde, 28 Jan 2015

DOI: 10.15129/8b38955e-8238-4f16-97c8-e58b36de8d06

Video for pick&place study in AFRC project

Yan, Y. (Creator), University of Strathclyde, 5 Mar 2019

DOI: 10.15129/4df22803-2cc4-4cce-9cea-509f88f1b504