UNIVERSITY OF LIVERPOOL

Higher Education Achievement Report (Diploma Supplement)

Name: Yu Zhang
Award: Bachelor of Engineering with Honours
Field of study: Computer Science and Electronic Engineering
Classification: Class Two Division One
Award Date: 17th July 2020

The University of Liverpool is a member of the Russell Group, which represents the 24 leading UK universities committed to maintaining the very best research, an outstanding teaching and learning experience and unrivalled links with business and the public sector.

This Higher Education Achievement Report incorporates the model developed by the European Commission, Council of Europe and UNESCO/CEPES for the Diploma Supplement.

The purpose of the Supplement is to provide sufficient recognition of qualifications (diplomas, degrees, certificates etc.). It is designed to provide a description of the nature, level, context and status of the studies that were pursued and successfully completed by the individual named on the original qualifications to which this Supplement is appended. It should be free from any value judgements, equivalence statements or suggestions about recognition. Information in all eight sections should be provided. Where information is not provided, an explanation should give the reason why.

The University of Liverpool only produces HEARs in a digital format. Only HEARs accessed via https://verify.liverpool.ac.uk can be considered valid and verified.

INFORMATION IDENTIFYING THE HOLDER OF THE QUALIFICATION

1.1	**Family name(s):**	Zhang
1.2	**Given name(s):**	Yu
1.3	**Date of birth (day/month/year):**	22nd November 1998
1.4	**Student identification number or code:**	201377340
	HESA reference number:*	1811263773401

*HUSID (HESA Unique Student Identifier) is the unique national identifying number for students registered at a UK university. It is defined by HESA, the UK's Higher Education Statistics Agency.

INFORMATION IDENTIFYING THE QUALIFICATION

2.1	**Name of qualification and (if applicable) title conferred:**	Bachelor of Engineering with Honours The power to award degrees is regulated by law in the UK. This degree is part of a dual award, issued conjointly between the University of Liverpool (UK) and Xi'an Jiaotong-Liverpool University (China) .
2.2	**Main field(s) of study for the qualification:**	Computer Science and Electronic Engineering
2.3	**Name and status of awarding institution(s):**	This degree is awarded by the University of Liverpool, a university established by Royal Charter and a recognised body for the award of degrees.
2.4	**Name and status of institution(s) (if different from 2.3) administering studies:**	The holder of this Achievement Record was registered full time on an undergraduate programme delivered at Xi'an Jiaotong-Liverpool University (China) and the University of Liverpool (UK), leading to the University of Liverpool award indicated. Xi'an Jiaotong-Liverpool University is an independent university, recognised by the Chinese Ministry of Education, established in partnership between the University

of Liverpool and Xi'an Jiaotong University.

2.5	**Language(s) of instruction/examination:**	All teaching and assessment that leads to a University of Liverpool award is in English, except for programmes of study involving language studies, where some teaching and assessment is in the relevant language(s).

INFORMATION ON THE LEVEL OF THE QUALIFICATION

3.1	**Level of qualification:**	Undergraduate programme assigned to level 6 in the Framework for Higher Education Qualifications (see Section 8 for further details on the UK Higher Education System), and Bologna FQ-EHEA 1st cycle degree compatible
3.2	**Official length of programme:**	Four years
3.3	**Access requirement(s):**	Detailed information regarding admission to the programme is available in the University's Online Prospectus at https://www.liverpool.ac.uk/study/undergraduate/courses

INFORMATION ON THE CONTENTS AND RESULTS GAINED

4.1   Mode of study:

2016-2017 - No attendance

2017-2018 - No attendance

2018-2019 - Full time

2019-2020 - Full time

4.2   Programme requirements:

This programme aims at developing graduates competent in the fundamentals of both electronics and computer science. The programme described in this document builds upon the Department's well established Electrical Engineering and Electronics BEng (Hons) programme and provides additional specialised core modules which cover the fundamentals of computer science. In addition we aim to produce graduates with wider transferable skills (communication, team working, organisational awareness, project management etc.) who are able to meet the needs of a wide spectrum of employers both within and outside the electronics sector. This programme has been designed to meet the educational requirements of a BEng degree accredited by the Institution of Engineering and Technology (IET). We also aim to provide an intellectually stimulating, rigorous, challenging and rewarding experience for the students on this programme along with an exposure to the state of the art tools used for developing electronic systems.

1. An understanding of the fundamentals of electronics at BEng level;

2. Knowledge in the fundamentals of computer science;

3. Knowledge and skills in mathematics, programming, software engineering, design and management;

4. Transferable skills such as analysis, design, problem solving, communications, team-working and project management.

A Bachelor's degree is normally obtained after three years full-time study or part-time equivalent. Modules totalling at least 90 (45 ECTS) should be at Level 5 in Year 2 and at Level 6 in Year 3.In the Honours Select programmes the modules in the minor subject components should be level 6 in year 3.

4.3   Programme details, and the individual grades/marks/credits obtained:

Programme Start Date: 24th September 2018
Programme End Date: 29th May 2020

2016-2017 - Xi'an Jiaotong-Liverpool University (China) - Year 0 (Foundation year)

Module Code	Title	Credits	ECTS	Semester	FHEQ Level	Grade	Result
CCT 007	Self-management	2	1	1	3	63	P
CCT 009	Introduction to Literature and Media Culture	2	1	1	3	51	P
CSE 003	Fundamentals of Computer Programming	2.5	1.25	1	3	71	P
EAP 011	English Language and Study Skills I for Industrial Technology	10	5	1	3	46	P
MTH 013	Calculus (Science & Engineering)	5	2.5	1	3	76	P
PHE 001	Physical Education 1	1	.5	1	3	92	P
CCT 008	Ideological and Moral Cultivation and Basis of Law	2	1	2	3	56	P
CCT 010	The Modernization Process of China	2	1	2	3	55	P
CSE 004	Professional Skills in Computer Science	2.5	1.25	2	3	61	P
EAP 008	English Language and Study Skills II for Engineering	10	5	2	3	42	P
MTH 007	Linear Algebra	2.5	1.25	2	3	64	P
MTH 008	Multivariable Calculus (Science and Engineering)	5	2.5	2	3	79	P
PHE 002	Physical Education 2	1	.5	2	3	85	P
PHY 006	Physics II: Introduction to Electromagnetism	2.5	1.25	2	3	51	P
	Credits Obtained	**50**					

2017-2018 - Xi'an Jiaotong-Liverpool University (China) - Year 1

Module Code	Title	Credits	ECTS	Semester	FHEQ Level	Grade	Result
CSE 101	Computer Systems	5	2.5	1	4	55	P
CSE 105	Introduction to Programming in Java	5	2.5	1	4	66	P
EEE 103	Electrical Circuits I	5	2.5	1	4	52	P
EEE 109	Electronic Circuits	5	2.5	1	4	40	P
MTH 101	Engineering Mathematics I	5	2.5	1	4	45	P
CSE 103	Introduction to Databases	5	2.5	2	4	59	P
EEE 102	C++ Programming and Software Engineering II	2.5	1.25	2	4	66	P
EEE 104	Digital Electronics I	2.5	1.25	2	4	40	P
EEE 112	Integrated Electronics and Design	2.5	1.25	2	4	60	P
MTH 102	Engineering Mathematics (II)	2.5	1.25	2	4	87	P
EAP 111	English Language and Study Skills III for Engineering	10	5	3	4	41	P
	Credits Obtained	**50**					

2018-2019 - The University of Liverpool (UK) - Year 2

Module Code	Title	Credits	ECTS	Semester	FHEQ Level	Grade	Result
COMP 201	Software Engineering 1	15	7.5	1	5	58	P
COMP 207	Database Development	15	7.5	1	5	52	P
ELEC 270	Signals and Systems	15	7.5	1	5	73	P
COMP 212	Distributed Systems	15	7.5	2	5	56	P
ELEC 202	Communication Systems	7.5	3.75	2	5	58	P
ELEC 211	Digital Electronics and Microprocessor Systems	15	7.5	2	5	75	P
ELEC 271	Electronic Circuits And Systems	15	7.5	2	5	60	P
ELEC 207	Instrumentation and Control	15	7.5	3	5	63	P
ELEC 222	Project, Problem Solving And Industrial	7.5	3.75	3	5	69	P

	Awareness						
	Credits Obtained	**120**					

2019-2020 - The University of Liverpool (UK) - Year 3

Module Code	Title	Credits	ECTS	Semester	FHEQ Level	Grade	Result
COMP 323	Introduction to Computational Game Theory	15	7.5	1	6	71	P
ELEC 352	Engineering Management and Entrepreneurial Skills	7.5	3.75	1	6	63	P
ELEC 362	Application Development With C++	15	7.5	1	6	51	P
ELEC 370	Embedded Computer Systems	15	7.5	1	6	42	P
COMP 310	Multi-Agent Systems	15	7.5	2	6	65	P
COMP 315	Technologies For E-Commerce	15	7.5	2	6	63	P
ELEC 320	Neural Networks	7.5	3.75	2	6	82	P
COMP 390	Honours Year Computer Science Project	30	15	3	6	63	P
	Credits Obtained	**120**					

* - Indicates a mark obtained at a second or subsequent sitting
E - Indicates Extenuating Circumstances

4.4   Module grading scheme and, if available, grade distribution guidance:

Grade (100 point scale)

70 to 100	First Class
60 to 69	Upper second class (2.1)
50 to 59	Lower second class (2.2)
40 to 49	3rd Class
35 to 39	Narrow Fail (but compensation may be allowed in accordance with University's rules)
Less than 40	Fail

4.5   Overall classification of the qualification (in original language):

Class Two Division One

Information about the degree classification methodology used at the University of Liverpool is available at https://www.liverpool.ac.uk/aqsd/academic-codes-of-practice/code-of-practice-on-assessment/

INFORMATION ON THE FUNCTION OF THE QUALIFICATION

5.1   Access to further study: Attainment of an undergraduate degree may entitle access to postgraduate study (Bologna FQ-EHEA 2nd or 3rd cycle/level 7 or 8 qualifications or equivalent) and/or professional career opportunities.

5.2   Professional status (if applicable):

ADDITIONAL INFORMATION

6.1   This section provides details of extra-curricular student awards and activities that represent achievement, and have been verified by the University of Liverpool. Details of prizes gained whilst at the University are also listed here. Please note that the number of extra-curricular activities which the University and the Liverpool Guild of Students are currently able to verify is limited. Students may therefore have undertaken additional activities which have contributed significantly to their personal and professional development. They will be encouraged to record these in other documentation.

6.2   Further information sources:　　　Further information concerning the University of Liverpool may be obtained from the University's website (www.liverpool.ac.uk). A description of the UK higher education system may be obtained from the UCAS website (https://www.ucas.com/ucas/undergraduate/getting-started/what-higher-education).

CERTIFICATION OF THE HEAR

7.1   Date:　　　　　　　　　　　24th July 2020

7.2   Award Date:　　　　　　　　17th July 2020

7.3   Signature:

7.4   Capacity:　　　　　　　　　Director of Student Experience & Enhancement

7.5   Official Seal:

INFORMATION ON THE NATIONAL HIGHER EDUCATION SYSTEM
Description of Higher Education in England, Wales and Northern Ireland

In England, Wales and Northern Ireland[2], higher education institutions are independent, self-governing bodies active in teaching, research and scholarship. They are established by Royal Charter or legislation and most are part-funded by government.

Higher education (HE) is provided by many different types of institution. In addition to universities and university colleges, whose charters and statutes are made through the Privy Council which advises the Queen on the granting of Royal Charters and incorporation of universities, there are a number of publicly-designated and autonomous institutions within the higher education sector. Publicly funded higher education provision is available in some colleges of further education by the authority of another duly empowered institution. Teaching to prepare students for the award of higher education qualifications can be conducted in any higher education institution and in some further education colleges.

Degree awarding powers and the title "university"

All universities and many higher education colleges have the legal power to develop their own courses and award their own degrees, as well as determine the conditions on which they are awarded. Some HE colleges and specialist institutions without these powers offer programmes, with varying extents of devolved authority, leading to the degrees of an institution which does have them. All universities in existence before 2005 have the power to award degrees on the basis of completion of taught courses and the power to award research degrees. From 2005, institutions in England and Wales that award only taught degrees ("first" and "second cycle") and which meet certain numerical criteria, may also be permitted to use the title "university". Higher education institutions that award only taught degrees but which do not meet the numerical criteria may apply to use the title "university college", although not all choose to do so. All of these institutions are subject to the same regulatory quality assurance and funding requirements as universities; and all institutions decide for themselves which students to admit and which staff to appoint. Degrees and other higher education qualifications are legally owned by the awarding institution, not by the state. The names of institutions with their own degree awarding powers ("Recognised Bodies") are available for download at:
http://www.bis.gov.uk/policies/higher-education/recognised-uk-degrees/recognised-bodies.

Higher education institutions, further education colleges and other organisations able to offer courses leading to a degree of a Recognised Body are listed by the English, Welsh and Northern Irish authorities, and are known as "Listed Bodies". View the list at:
http://www.bis.gov.uk/policies/higher-education/recognised-uk-degrees/listed-bodies.

Qualifications

The types of qualifications awarded by higher education institutions at sub-degree and undergraduate (first cycle)

In terms of the European Higher Education Area they are "short cycle" qualifications within the first cycle. The FHEQ is one component of the Credit and Qualifications Framework for Wales (CQFW). The Qualifications and Curriculum Authority (QCA), the Department for Children, Education, Lifelong Learning and Skills, Wales (DCELLS) and the Council for Curriculum Examination and Assessment, Northern Ireland (CCEA) have established the Qualifications and Credit Framework (to replace, in time, the National Qualifications Framework (NQF)). These authorities regulate a number of professional, statutory and other awarding bodies which control VET and general qualifications at all levels. The QCF is also incorporated into the CQFW. There is a close association between the levels of the FHEQ and the NQF (as shown overleaf), and other frameworks of the UK and Ireland (see "Qualifications can cross Boundaries"
http://www.qaa.ac.uk/Publications/InformationAndGuidance/Pages/qualifications-can-cross-boundaries.aspx

Quality Assurance

Academic standards are established and maintained by higher education institutions themselves using an extensive and sophisticated range of shared quality assurance approaches and structures. Standards and quality in institutions are underpinned by the universal use of external examiners, a standard set of indicators and other reports, by the activities of the QAA, and in professional areas by relevant professional, statutory and regulatory bodies. This ensures that institutions meet national expectations described in the FHEQ: subject benchmark statements, the Code of Practice and programme specifications. QAA conducts peer-review based audits and reviews of higher education institutions with the opportunity for subject-based review as the need arises. The accuracy and adequacy of quality-related information published by the higher education institutions is also reviewed. QAA also reviews publicly funded higher education provision in further education colleges.

Credit Systems

Most higher education institutions in England and Northern Ireland belong to one of several credit consortia and some operate local credit accumulation and transfer systems for students moving between programmes and/or institutions. A framework of national guidelines, the Higher Education Credit Framework for England, was launched in 2008. Credit is also an integral part of the CQFW and the QCF. It may be possible for credit awarded in one framework to be recognised by education providers whose qualifications sit within a different framework. HE credit systems in use in England, Wales and Northern Ireland are compatible with the European Credit Transfer System (ECTS) for accumulation and transfers within the European Higher Education Area, and are used to recognise learning gained by students in institutions elsewhere in Europe.

Admission

The most common qualification for entry to higher education is the General Certificate of Education at "Advanced" (A) level. Other

and postgraduate level (second and third cycles) are described in the Framework for Higher Education Qualifications in England, Wales and Northern Ireland (FHEQ). This also includes qualification descriptors that were developed with the HE sector by the Quality Assurance Agency for Higher Education (QAA - established in 1997 as an independent UK-wide body to monitor the standard of higher education provision – www.qaa.ac.uk). The FHEQ was self-certified as compatible with the Framework for Qualifications of the European Higher Education Area, the qualifications framework adopted as part of the Bologna Process, in February 2009. Foundation degrees, designed to create intermediate awards strongly oriented towards specific employment opportunities, were introduced in 2001.

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[2] The UK has a system of devolved government, including for higher education, to Scotland, to Wales and to Northern Ireland. This description is approved by the High Level Policy Forum which includes representatives of the Department for Business, Innovation and Skills, the Scottish Government, the Welsh Assembly Government, the Higher Education Funding Councils for England, Scotland and Wales, the Quality Assurance Agency (QAA), Universities UK (UUK), GuildHE and the National Recognition Information Centre for the UK (UK NARIC).

appropriate NQF level 3 qualifications and the kite-marked Access to HE Diploma may also provide entry to HE. Level 3 qualifications in the CQFW, including the Welsh Baccalaureate, also provide entry, as do Scottish Highers, Advanced Highers or qualifications at the same levels of the Scottish Credit and Qualifications Framework. Part-time and mature students may enter HE with these qualifications or alternatives with evidenced equivalent prior formal and/or experiential learning. Institutions will admit students whom they believe to have the potential to complete their programmes successfully.

Diagram of higher education qualification levels in England, Wales and Northern Ireland

National Qualifications Framework for England, Wales and Northern Ireland[6]

Typical Qualifications	Level
Vocational Qualifications Level 8	8
Fellowships, NVQ Level 5, Vocational Qualifications Level 7	7
Vocational Qualifications Level 6	6
NVQ Level 4, Higher National Diplomas (HND), Higher National Certificates (HNC), Vocational Qualifications Level 5	5
Vocational Qualifications Level 4	4
National Vocational Qualification (NVQ) Level 3, Vocational Qualifications Level 3, GCE AS and A Level, Advanced Diploma, Welsh Baccalaureate Advanced[4]	3
Levels 2, 1 and entry	→

Progression for selection of students (FHEQ levels)

Framework for Higher Education Qualifications (FHEQ)[5]

Typical Qualifications	Level	FQ-EHEA cycle	Credit: Typical UK	Credit: Typical ECTS credit ranges[3]
Doctoral Degrees (eg PhD, DPhil, EdD)	8	3rd cycle	Typically not credit rated[1]	Typically not credit rated
Masters Degrees, Integrated Masters Degrees, Postgraduate Diplomas, Postgraduate Certificate of Education, Postgraduate Certificates	7	2nd cycle	180	60-120[2]
Bachelors Degrees with Honours, Bachelors Degrees, Professional Graduate Certificate in Education, Graduate Diplomas, Graduate Certificates	6	1st cycle	360	180-240
Foundation Degrees, Diplomas of Higher Education, Higher National Diplomas	5	Short cycle	240	120
Higher National Certificates, Certificates of Higher Education	4		120	
Entry to HE via equivalent experiential or prior learning				

[1] PhD and DPhil qualifications are typically not credit-rated. Newer doctoral degrees, such as the Professional Doctorate, are sometimes credit rated, typically 540 UK credits.
[2] A range of 90-120 ECTS is typical of most awards
[3] 1 ECTS credit is typically worth 2 UK credits
[4] The Welsh Baccalaureate Qualification is part of the Credit and Qualifications Framework for Wales (CQFW)

[5] For students with the necessary prerequisites, entry to each FHEQ level is possible from the next lower level in the NQF or Framework for Higher Education Qualifications.
[6] These levels will also apply to the Qualifications and Credit Framework (QCF). The QCF will eventually replace the National Qualifications Framework (NQF)