EKSAMENSBEVIS
DIPLOMA

Jacob Ravn

Cpr.nr.: 260494-1655

Datamatiker AK

AP Graduate in Computer Science

København / Copenhagen, 17.01.2022

Steen Enemark Kildesgaard
Rektor / Rector

Uddannelsen er gennemført i henhold til bekendtgørelse nr. 1162 af 10/07/2020 om teknisk og merkantile erhvervsakademiuddannelser og professionsbacheloruddannelser.

Dette er et digitalt eksamensbevis. Beviset kan kun verificeres digitalt på nedenstående link.

The student has completed the education in compliance with executive order no. 1162 of 10/07/2020 in the Ministerial order for Technical and Commercial Academy Profession programmes and Professional Bachelor Programmes.

This is a digital diploma. The diploma can only be verified digitally by following the link below.

https://bevissystem.dk/kea/Verify/aum8rLBwMpQG

kea

Navn /
Name: Jacob Ravn

Personnummer /
Civil registration number: 260494-1655

Uddannelse afsluttet /
Education finished: 17.01.2022

Sprog i undervisning/eksamination /
Language of instruction/examination: Dansk / Danish

ECTS i alt /
ECTS total: **150**

1. - 2. semester / 1st - 2nd semester Emneoversigt / Subject	**Prøve / Test**	**Karakter / Mark**	**ECTS-point / ECTS credits**	**ECTS / ECTS**
1. delprøve, 25%, Programmering 1st partial test, 25%, Programming	Ekstern / External	12	0	A
2. delprøve, 75%, 1 årseksamen 2st partial test, 75%, 1st year exam	Ekstern / External	10	0	B
Førsteårsprøve First year exam	Ekstern / External	10	60	B

3. semester / 3rd semester Emneoversigt / Subject	**Prøve / Test**	**Karakter / Mark**	**ECTS-point / ECTS credits**	**ECTS / ECTS**
Systemudvikling 2 System Development 2	Intern / Internal	7	10	C
Teknologi 2 Technology 2	Intern / Internal	02	10	E
Programmering 2 Programming 2	Intern / Internal	12	10	A

4. semester / 4th semester Emneoversigt / Subject	Prøve / Test	Karakter / Mark	ECTS-point / ECTS credits	ECTS / ECTS
Full Stack Development with NodeJS Full Stack Development with NodeJS	Intern / Internal	7	10	C
Intro to Python Intro to Python	Intern / Internal	4	10	D
IT Drift IT Drift	Intern / Internal	7	10	C

5. semester / 5th semester Emneoversigt / Subject	Prøve / Test	Karakter / Mark	ECTS-point / ECTS credits	ECTS / ECTS
Praktik Internship	Intern / Internal	12	15	A
Afsluttende eksamensprojekt Final exam project	Ekstern / External	7	15	C

Praktik / Internship
Arbejdspladspraktik: VENZO.nxt A/S Work Placement Internship: VENZO.nxt A/S

Diploma Supplement

Copenhagen School of Design and Technology

AP Graduate in Computer Science

Academy of Professional Higher Education

The purpose of the supplement is to provide sufficient independent data to improve the international "transparency" and fair academic and professional recognition of qualifications (diplomas, degrees, certificates etc.). It is designed to provide a description of the nature, level, context, content and status of the studies that were pursued and successfully completed by the individual named on the original qualification to which this supplement is appended. It is free from any value judgements, equivalence statements or suggestions about recognition. This Diploma Supplement model was developed by the European Commission, Council of Europe and UNESCO.

1. INFORMATION IDENTIFYING THE HOLDER OF THE QUALIFICATION

1.1 Last name(s): Ravn
1.2 First name(s): Jacob
1.3 Date of Birth: 26.04.1994
1.4 Student identification number or code: 260494-1655

2. INFORMATION IDENTIFYING THE QUALIFICATION

2.1 Name of qualification and title conferred (in original language): Datamatiker AK
2.2 Main fields of study: Software Construction, Software Design, IT in Organisations and Computer Architecture
2.3 Name and status of awarding institution (in original language): KEA – Københavns Erhvervsakademi (in English: KEA - Copenhagen School of Design and Technology) offers Danish and international AP-degree and BA programmes within Design, Building, Technology and Digital areas. KEA - Københavns Erhvervsakademi is a state-recognised higher education institution regulated and supported by The Danish Ministry of Higher Education and Science and a large number of advisory bodies including representatives from trade and industry and labour market organisations. KEA - Københavns Erhvervsakademi has undergone external quality assurance by the Danish Accreditation Institution (in Danish: Danmarks Akkrediteringsinstitution)
2.4 Name and status of awarding institution: As above
2.5 Language(s) of instruction/examination: Danish/Danish

3. INFORMATION ON THE LEVEL AND DURATION OF THE QUALIFICATION

3.1 Level of qualification: A short qualification in the first cycle of QF-EHEA/Level 5 EQF
3.2 Official length of programme: 2 years and 6 months' full-time programme corresponding to 150 ECTS credits
3.3 Access requirements: Upper Secondary School Leaving Certificate or comparable qualifications or relevant vocational training. See www.kea.dk under admission to the programme

4. INFORMATION ON THE PROGRAMME COMPLETED AND THE RESULTS OBTAINED

4.1 Mode of study: Full-time degree programme including a period of internship, equivalent to a total of 150 ECTS credits.
4.2 Programme learning outcomes: The intended learning outcome for an AP Graduate in Computer Science includes the following:

Knowledge:
The graduate has acquired knowledge about:

- Generally applied practice, theory and method within software development
- Basic business conditions related to system development
- The technological foundation of technological concepts and IT systems in relation to programming, troubleshooting and initialization

Skills:
The graduate has acquired the skills needed to:

- Methodologically identify IT system requirements, and assess the extent to which the requirements can be met within the given framework
- Use modern and up-to-date programming techniques and tools for software construction, and ensure the quality of the developed product
- Document the performed work and ensure that the documentation is useful for the given target group
- Apply the relevant knowledge in connection with system development, programming and initiation
- Conduct systematic troubleshooting and correct errors in connection with IT systems
- Assess practice-oriented IT issues, and propose and select possible solutions
- Communicate practice-oriented issues and possible solutions to partners and users.

Competencies:
The graduate has acquired the competencies needed to:

- Participate in the development of software development practice
- Competently participate in project work
- Take a professional approach to disciplinary and interdisciplinary collaboration in connection with software development
- Participate in system development using modern methods, techniques and tools
- In a structured context acquire new knowledge, skills and competencies in relation to the IT sector, including domain knowledge and technological knowledge as well as application of new methods, techniques and tools.

For further information please see our website: www.kea.dk

4.3 Programme details and individual grades/marks/credits obtained: See attached transcript of records
4.4 Grading system and, if available, grade distribution table: 7-point grading scale, cf. attachment
4.5 Overall classification of the qualification: Not applicable for Danish qualifications

5. INFORMATION ON THE FUNCTION OF THE QUALIFICATION

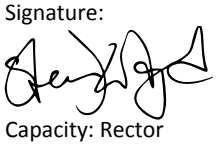
5.1 Access to further study: The AP degree in Computer Science gives access to further top-up studies for a Bachelor's degree in software construction, web development, IT Security or digital concept development, also provided by KEA. It further gives access to a number of B.Sc studies in engineering.
5.2 Access to a regulated profession (if applicable): Typical work functions within the software area are that of software or systems developer, programmer, project or quality assurance manager

6. ADDITIONAL INFORMATION

6.1 Additional information: See attached documents, if any
6.2 Further information sources: See programme curriculum etc. on www.kea.dk

7. CERTIFICATION OF THE SUPPLEMENT

7.1 Date: 17.01.2022
7.2 Signature:



7.3 Capacity: Rector
7.4 Official stamp or seal:

8. INFORMATION ON THE NATIONAL HIGHER EDUCATION SYSTEM

Cf. Attachment

Public higher education institutions in Denmark are regulated by national legislation concerning degree structures, teacher qualifications and examinations. Accreditation in higher education is undergoing transition from programme-based accreditation to institutional accreditation. Programmes and institutions are accredited by national, independent accreditation agencies and the Accreditation Council.

Higher education institutions

Higher education is offered by five types of higher education institutions:

1. Business academies *(Erhvervsakademi)* offering professionally oriented short cycle and first cycle degree programmes.
2. University Colleges *(Professionshøjskole)* offering professionally oriented first cycle degree programmes.
3. Maritime Education and Training Institutions offering professionally oriented short cycle and first cycle degree programmes.
4. General and specialised research universities *(Universitet)* offering first, second and third cycle degree programmes in academic disciplines.
5. University level institutions offering first, second and third cycle degree programmes in subject fields such as architecture, design, music, and fine and performing arts.

Most higher education institutions are regulated by the Ministry of Higher Education and Science (type 1-5). The Ministry of Culture regulates a number of higher education institutions offering programmes within fine and performing arts (type 5).

Degrees in the Danish Higher Education System

<table>
<tr><th>Danish qualifications levels</th><th>Ordinary higher education degrees</th><th>Adult/continuing higher education Degrees</th><th>Qualifications Framework for the European Higher Education Area – Bologna Framework</th><th>European/National Qualifications Framework for Lifelong Learning – EQF/NQF</th></tr>
<tr><td>Academy Profession level</td><td>Academy Profession (AP) degree (90-150 ECTS)</td><td>Academy Profession (AP) degree (60 ECTS) (also known as Further Adult Education (VVU) degree)</td><td>Short cycle</td><td>Level 5</td></tr>
<tr><td rowspan="3">Bachelor’s level</td><td>Professional Bachelor’s degree (180-270 ECTS)*</td><td rowspan="3">Diploma degree (60 ECTS)</td><td rowspan="3">First cycle</td><td rowspan="3">Level 6</td></tr>
<tr><td>Bachelor’s degree (within the arts) (180 ECTS)</td></tr>
<tr><td>Bachelor’s degree (180 ECTS)</td></tr>
<tr><td rowspan="2">Master’s level</td><td>Master’s degree (within the arts) (120-180 ECTS)</td><td rowspan="2">Master degree (60-90 ECTS)</td><td rowspan="2">Second cycle</td><td rowspan="2">Level 7</td></tr>
<tr><td>Master’s degree (120 ECTS)**</td></tr>
<tr><td>PhD level</td><td>PhD degree (180 ECTS)</td><td></td><td>Third cycle</td><td>Level 8</td></tr>
</table>

* Can be obtained through a full regular bachelor’s programme (180-270 ECTS) or a top up bachelor’s programme following an Academy Profession degree.

** A few Master’s programmes are up to 180 ECTS.

Higher education institutions measure study activities in ECTS credits. 60 ECTS correspond to one year full-time study.

Qualifications framework

The qualification levels form the basis for the Danish National Qualifications Framework for Higher Education, which is certified in accordance with the overarching Bologna Framework according to the principles adopted by the European

Ministers of Higher Education. Danish higher education qualifications at levels 5-8 of the Danish Qualifications Framework for Lifelong Learning (NQF) correspond with levels 5-8 of the European Qualifications Framework (EQF).

Admission and progression
General access to higher education in Denmark requires an Upper Secondary School Leaving Certificate or comparable qualifications. Admission to some particular programmes requires entrance examination or submission of a portfolio of artistic work. Holders of an Academy Profession degree can obtain a Professional Bachelor's degree within the same field of study through a top-up programme. Completion of a first cycle degree qualifies students for admission to the second cycle.

Ordinary Higher Education degrees

The Academy Profession degree is awarded after 90-150 ECTS and includes a period of work placement of at least 15 ECTS. The programmes are development-based and combine theoretical studies with a practical approach. Programmes are, among others, offered within Marketing Management, Computer Science and Chemical and Biotechnical Science. The Danish title is *Erhvervsakademi i* (field of study) followed by the abbreviation *AK* and the English title is *AP Graduate in* (field of study).

The Professional Bachelor's degree is awarded after 180-270 ECTS and includes a period of work placement of at least 30 ECTS. The programmes are applied programmes. They are development-based and combine theoretical studies with a practical approach. Examples of professional bachelor's degree holders are nurses, primary and lower secondary school teachers and certain types of engineers. The Danish title is *Professionsbachelor i* (field of study) and the English title is *Bachelor of* (field of study).

The Bachelor's degree from a university is awarded after 180 ECTS. The programmes are research-based and are offered in all scientific fields. The Danish title is *Bachelor (BA) i* (field of study) or *Bachelor (BSc) i* (field of study) and the English title is *Bachelor of Arts (BA) in* (field of study) or *Bachelor (BSc) of Science in* (field of study).

The Bachelor's degree (within the arts) is awarded after 180 ECTS. The programmes are based on research and artistic research. Programmes are offered within the fine arts. The Danish title is *Bachelor (BA) i* (field of study), *Bachelor i musik (BMus)* (field of study) or *Bachelor i billedkunst (BFA)* (field of study) and the English title *is Bachelor of Arts (BA) in* (field of study), *Bachelor of Music (BMus)* (field of study) or *Bachelor of Fine Arts (BFA) in* (field of study). A higher education degree within theatre or filmmaking is awarded after 3-4 years of study (180-240 ECTS).

The Master's degree is awarded after 120 ECTS. The programmes are research-based and are offered in all scientific fields. The Danish title is abbreviated to *Cand.*(latin abbreviation of academic area)i (field of study). The English title is *Master of Arts (MA) in* (field of study) or *Master of Science (MSc) in* (field of study).

The Master's degree (within the arts) is awarded after 120-180 ECTS. The programmes are based on research and artistic research. The Danish title is abbreviated to *Cand.*(latin abbreviation of academic area)(field of study). The English title is *Master of Arts (MA) in* (field of study), *Master of Music (MMus)* (field of study) or *Master of Fine Arts (MFA) in* (field of study). Music Academies offer a specialist degree of 2 to 4 years following the master's degree.

The PhD degree is awarded after 180 ECTS. PhD programmes are offered by the universities and some university level institutions offering degrees in the artistic and cultural field.

Detailed descriptions of degree levels can be found in the Danish Qualifications Framework at www.nqf.dk. Please consult the relevant Diploma Supplement for information about the learning outcome of any specific degree.

Adult and continuing higher education
The programmes normally consist of 2 years of part-time study, equivalent to 1 year of full-time study (60 ECTS credits). Certain master programmes require 1½ years of full-time study (90 ECTS credits). Admission requirements are a relevant educational qualification and at least 2 years of relevant work experience.

Adult and continuing education is available at levels corresponding to qualifications of the ordinary higher education system.
The Further Adult Education degree *(videregående voksenuddannelse/akademiuddannelse)* is awarded after studies at short cycle level and gives access to diploma programmes.
The Diploma degree *(diplomuddannelse)* is awarded after studies at first cycle level and gives access to master programmes.
The Master degree *(masteruddannelse)* is awarded after studies at second cycle level.

The 7-point grading scale
The grading system used in all state-regulated education programmes as of September 2007 is the 7-point grading scale. Apart from the 7-point grading scale, pass/fail assessment may also be used. 02 is the minimum grade for passing an exam.

Description of grades: 12: For an excellent performance displaying a high level of command of all aspects of the relevant material, with no or only a few minor weaknesses; 10: For a very good performance displaying a high level of command of most aspects of the relevant material, with only minor weaknesses; 7: For a good performance displaying good command of the relevant material but also some weaknesses; 4: For a fair performance displaying some command of the relevant material but also some major weaknesses; 02 For a performance meeting only the minimum requirements for acceptance; 00: For a performance which does not meet the minimum requirements for acceptance; -3 For: a performance which is unacceptable in all respects