**AALBORG UNIVERSITET**
AALBORG UNIVERSITY
DENMARK

# EKSAMENSBEVIS
## DIPLOMA

**GRAD TILDELT 2024**
DEGREE AWARDED 2024

**MAGNI JÓGVANSSON HANSEN**

CPR. NR. 050297■■■■
DATE OF BIRTH 5 FEBRUARY 1997

**CIVILINGENIØR, CAND.POLYT. I SOFTWARE**
**CANDIDATUS POLYTECHNICES (CAND.POLYT.)**
MASTER OF SCIENCE (MSC) IN ENGINEERING (SOFTWARE)

**DET TEKNISKE FAKULTET FOR IT OG DESIGN**
TECHNICAL FACULTY OF IT AND DESIGN

**THOMAS BAK**
**DEKAN**
DEAN

**HANNE TORP**
**STUDIEADMINISTRATIV MEDARBEJDER**
ADMINISTRATIVE OFFICER

| Navn: | **Magni Jógvansson Hansen** |
| Uddannelse: | **Civilingeniør, cand.polyt. i software (120 ECTS)** |
| Afsluttet: | **19. juni 2024** |
| Adgangsgrundlag: | **En dansk bacheloruddannelse inden for teknisk videnskab** |

| | 7-trinsskala | ECTS-skala | ECTS-omfang |
|---|---|---|---|
| **4. semester** | | | |
| Kandidatspeciale[1]<br>Titel: Autoencoders for Signature Extraction: Systematically evaluating Pre- and Post-Processing | 12 | A | 30 |
| **3. semester** | | | |
| Forspecialisering i software[1]<br>Titel: SEEF: A Signature Extraction and Evaluation Framework | 10 | B | 20 |
| IT-Ret | 7 | C | 5 |
| Specialiseringskursus i maskinintelligens | 7 | C | 5 |
| **2. semester** | | | |
| Mobilitet[1]<br>Titel: Digital Whiteboard for Remote Teaching | 12 | A | 15 |
| Udvalgte emner inden for programmering | 7 | C | 5 |
| Processering af web information | 4 | D | 5 |
| Software innovation | 02 | E | 5 |
| **1. semester** | | | |
| Internet<br>Titel: SmartPresence | 4 | D | 15 |
| Dataintensive systemer[1] | 02 | E | 5 |
| Web Intelligence | 02 | E | 5 |
| Programmeringsparadigmer | 4 | D | 5 |
| **Vægtet gennemsnit efter studieordningens regler** | **8,1** | | |

[1] ) Eksamen er gennemført på engelsk

**Kandidaten har følgende kompetenceprofil:**
En kandidat har kompetencer erhvervet gennem et uddannelsesforløb, der er foregået i et forskningsmiljø.

Kandidaten kan varetage højt kvalificerede funktioner på arbejdsmarkedet på baggrund af uddannelsen. Desuden har kandidaten forudsætninger for forskning (ph.d.-uddannelse). Kandidaten har i forhold til bacheloren udbygget sin faglige viden og selvstændighed, således at kandidaten selvstændigt kan anvende videnskabelig teori og metode i såvel akademisk som erhvervsmæssig/professionel sammenhæng.

**Det Tekniske Fakultet for IT og Design**
**Aalborg Universitet**
**20. juni 2024**

Hanne Torp
Studieadministrativ medarbejder

| Name: | **Magni Jógvansson Hansen** |
| --- | --- |
| Programme: | **Master of Science (MSc) in Engineering (Software) (120 ECTS)** |
| Graduation: | **19 June 2024** |
| Admission requirement: | **A Danish Bachelor Programme within Engineering** |

| | 7 scale | ECTS scale | ECTS credits |
| --- | --- | --- | --- |
| **4th Semester** | | | |
| Master's Thesis[1]<br>Title: Autoencoders for Signature Extraction: Systematically evaluating Pre- and Post-Processing | 12 | A | 30 |
| **3rd Semester** | | | |
| Pre-specialisation in Software[1]<br>Title: SEEF: A Signature Extraction and Evaluation Framework | 10 | B | 20 |
| IT-Law | 7 | C | 5 |
| Specialisation Course in Machine Intelligence | 7 | C | 5 |
| **2nd Semester** | | | |
| Mobility[1]<br>Title: Digital Whiteboard for Remote Teaching | 12 | A | 15 |
| Selected Topics in Programming | 7 | C | 5 |
| Web Information Processing | 4 | D | 5 |
| Software Innovation | 02 | E | 5 |
| **1st Semester** | | | |
| Internet<br>Title: SmartPresence | 4 | D | 15 |
| Data-intensive Systems[1] | 02 | E | 5 |
| Web Intelligence | 02 | E | 5 |
| Programming Paradigms | 4 | D | 5 |
| **Gradepoint average has been calculated in accordance with the curriculum** | 8.1 | | |

[1] ) The exam was conducted in English

**A Candidatus graduate has the following competency profile:**
A Candidatus graduate has competencies that have been acquired via a course of study that has taken place in a research environment.

A Candidatus graduate is qualified for employment on the labour market on the basis of his or her academic discipline as well as for further research (PhD programmes). A Candidatus graduate has, compared to a Bachelor, developed his or her academic knowledge and independence so as to be able to apply scientific theory and method on an independent basis within both an academic and a professional context.

**Technical Faculty of IT and Design**
**Aalborg University**
**20 June 2024**

Hanne Torp
Administrative Officer

**Aalborg University**
# DIPLOMA SUPPLEMENT

This Diploma Supplement follows the model developed by the European Commission, Council of Europe and UNESCO/CEPES. 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 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.

## 1. INFORMATION IDENTIFYING THE HOLDER OF THE QUALIFICATION

**1.1. Family name(s):** Hansen
**1.2. Given name(s):** Magni Jógvansson
**1.3. Date of birth:** 5 February 1997
**1.4. Civil registration number:** 050297█████

## 2. INFORMATION IDENTIFYING THE QUALIFICATION

**2.1. Name of qualification and title conferred** *(in original language):*
Civilingeniør, cand.polyt. i software
**Name of qualification and title conferred** *(in English):*
Master of Science (MSc) in Engineering (Software)
**2.2. Main fields of study:**
Advanced theories, skills and experiences in Software Engineering.
**2.3. Name and status of awarding institution:**
Aalborg Universitet/Aalborg University (official abbreviated AAU) is a self-governing institution within public administration under the supervision of the Ministry of Higher Education and Science regulated according to the University Act no. 778 of 7 August 2019 with amendments.
Aalborg University is a university that has undergone external quality assurance by the Danish Accreditation Institution (in Danish: Danmarks Akkrediteringsinstitution), that is certified to follow the European Standards and Guidelines through registration in EQAR and membership in ENQA, in Denmark.
**2.4. Name and status of institution administering the studies:**
Not applicable.
**2.5. Language(s) of instruction/examination:**
Danish and English.

## 3. INFORMATION ON THE LEVEL OF THE QUALIFICATION

**3.1. Level of qualification:**
Master's degree at NQF/EQF Level 7 referring to Second Cycle in the Bologna QF.
**3.2. Official length of programme:**
2-year MSc/120 ECTS.
**3.3. Access requirements:**
Acceptance to the programme for Master of Science in Engineering (Software) requires a completed BSc degree in Software Engineering or equivalent BSc studies.

## 4. INFORMATION ON THE CONTENTS AND RESULTS GAINED

### 4.1. Mode of study:
A 2-year full-time study programme, equivalent to 120 ECTS.

### 4.2. Programme requirements:
The programme enables the student to acquire, critically assess and develop theories, methods and principles in Software Engineering and to apply them to practical problems.

### 4.3. Programme details and individual grades/marks/credits obtained:
Please refer to the diploma.

### 4.4. Grading scheme and if applicable grade distribution information:
Please refer to the grade transcript in this diploma supplement.

### 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:
Ph.D. studies at NQF/EQF level 8 referring to Third Cycle in the Bologna QF.

### 5.2. Professional status:
The education qualifies the graduate for a future career in software development and consultancy and research within the private and the public sector.

## 6. ADDITIONAL INFORMATION

### 6.1. Additional information
Aalborg University (AAU) is a research-based university founded in 1974. Basic as well as applied research is given a high priority. Funding comes from the government, from Danish and international research funds and from cooperation with industry.

The University has approximately 17,700 bachelor and master students and 840 PhD students. These figures include more than 2.200 foreign students. The university has a staff of approximately 3,400 full-time equivalents, of which more than 1,900 are researchers.

Aalborg University consists of the Faculty of Social Sciences and Humanities, the Faculty of Engineering and Science, the Technical Faculty of IT and Design and the Faculty of Medicine. The university offers a number of both undergraduate and postgraduate programmes, of which some are taught in English, as well as a variety of programmes in continuing education at Masters and Diploma level. AAU is characterized by combining a keen engagement in local, regional, and national issues with an active commitment to international collaboration.

Aalborg University uses a unique pedagogic model of teaching: Problem Based Learning (PBL). In most programmes time is equally shared between courses and project-work in groups with a focus on defining problems, interdisciplinarity and report writing.

Although the studies are dominated by group work, all examinations are conducted on an individual basis, and students are given individual grades.

### 6.2. Further information sources

Information in English on Aalborg University (study programmes, contents of the programmes, research, faculties and departments) is available at the University's website at https://en.aau.dk, e-mail international@adm.aau.dk.

General information on higher education can be obtained from the Danish Ministry of Higher Education and Science at https://ufm.dk/en and The Danish education system https://studyindenmark.dk.

## 7. CERTIFICATION OF THE SUPPLEMENT

### 7.1. Date:
20 June 2024

### 7.2. Signature:



Hanne Torp

### 7.3. Capacity:
Administrative officer

### 7.4. Official stamp or seal:

## The Danish Higher Education System                     December 2015

*Public higher education institutions in Denmark are regulated by national legislation concerning degree structures, teacher qualifications and examinations. All programmes 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. Academies of Professional Higher Education (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. Research universities (Universitet) offering first, second and third cycle degree programmes in all 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 of the higher education institutions are regulated by the Ministry of Higher Education and Science (type 1-5). The Ministry of Culture regulates a small number of higher education institutions offering first, second and third cycle degree programmes in fine and performing arts (type 5).

Degrees in the Danish Higher Education System:

| Danish qualifications levels | Ordinary higher education degrees | Adult/Continuing higher education degrees | Qualifications Framework for the European Higher Education Area - Bologna Framework | European/National Qualifications Framework for Lifelong Learning - EQF/NQF |
|---|---|---|---|---|
| **Academy Profession level** | Academy Profession degree (90-150 ECTS) | Academy Profession (AP) degree (60 ECTS) (also known as Further Adult Education (VVU) degree) | Short cycle | Level 5 |
| **Bachelor's level** | Professional Bachelor's degree (180-270 ECTS)* <br> Bachelor's degree (within the arts) (180 ECTS) <br> Bachelor's degree (180 ECTS) | Diploma degree (60 ECTS) | First cycle | Level 6 |
| **Master's level** | Master's degree (within the arts) (120-180 ECTS) <br> Master's degree (120 ECTS)** | Master degree (60-90 ECTS) | Second cycle | Level 7 |
| **PhD level** | PhD degree (180 ECTS) | | Third cycle | Level 8 |

* 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.

Danish higher education institutions use ECTS credits for measuring study activities. 60 ECTS correspond to one year's full-time study.

## Qualification 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) are also compatible 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.

Completion of a short-cycle degree qualifies students for admission to a first cycle programme. 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 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 180-240 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 4 years of study (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 Master's degree within medicine** is awarded after 180 ECTS. The programme is research-based. The Danish title is abbreviated to *Cand.med*. The English title is *Master of Science (MSc) in Medicine*.

**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 education qualifications are available at levels corresponding to those 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.