**Application template for Assistant/Associate/Full Professor**

Applications must be structured according to the specific numbered headings in the following template and are to be written in English (exception for, e.g., positions requiring ability to teach in Swedish). Please fill in this form and submit it in the Word format attached to your application in the Varbi system. Only text within the headings given below will be considered. The merits should be listed in chronological order.

(Arial font, size 11)

**1 BASIC INFORMATION**

***1.1 Name***

Juha-Matti Huusko

***1.2 Nationality*** (and Swedish personal identity numberif applicable)

Finnish

***1.3 Present Departmental affiliation with e-mail address and telephone number***

Department of Physics and Mathematics, University of Eastern Finland **(UEF)**

Head of the subject of mathematics: Risto Korhonen, [risto.korhonen@uef.fi](mailto:risto.korhonen@uef.fi), +358504422684

***1.4 Current employment with exact subject area and dates of employment***

Teacher, 1.9.2020-31.12.2020, in Introduction to Mathematics, Introduction to Analysis, Fourier Analysis.

***1.5 Previous employments*** (specify also relevant periods of leave of absence, e.g. for parental leave, military/government service, illness)

* In 1.8.2019-31.7.2020, university teacher, UEF, online course project.
* In 1.12.2018.-31.7.2020, postdoctoral researcher UEF, Nevanlinna theory and K. Yamanoi’s paper.
* In 1.2.2018-31.12.2020, IT support person, UEF.
* In 1.1.2014-31.7.2017, early stage researcher, UEF, making a PhD in mathematics.

***1.6 University degrees and diplomas*** (PhD, MSc, BSc, etc.; as well as Docent or equivalent). Attach certified copies of relevant diplomas.

* PhD, 15.6.2020, University of Eastern Finland, mathematics.
* MSc, 20.9.2016, University of Eastern Finland, qualified teacher in mathematics and physics.

**2 RESEARCH QUALIFICATIONS**

Assessment and evaluation criteria regarding scientific research proficiency:

• breadth and depth of the research – quality and extent

• originality of the research

• productivity

• contributions to the international scientific community

• assignments/responsibilities in the scientific community

• capability in competition to obtain external research funding

• interaction with the surrounding society

***2.1 Brief description of planned research activities*** (2 pages maximum, total

max. 6,000 characters; for Full Professorship, 3 pages max. 9,000 characters)

Collaborating in complex function spaces with Antti Perälä and other suitable persons.

Working with univalent functions in the same way as my two publications related to univalent functions.

Learning about K. Yamanoi’s proof of the Goldberg conjecture. Thus, doing research in Nevanlinna theory. In fact, K. Yamanoi’s proof is related to Teichmüller spaces which are related to univalent functions.

***2.2 List of publications*** (with all authors listed in order of name as published; mark your name in bold text). Organize the list according to the following two categories:

*2.2.1 International peer-reviewed journals and peer-reviewed conference proceedings*

* J. Gröhn, **J-M. Huusko**, J. Rättyä, Linear differential equations with slowly growing solutions, Trans. Amer. Math. Soc. 370 (2018), 7201-7227.
* **J.-M. Huusko**, T. Vesikko, On Becker’s univalence criterion, J.Math.Anal.Appl. (2017), 458 (1), 781-794.
* **J.-M. Huusko**, M. Martín, Criteria for bounded valence of harmonic mappings, Comput. Methods Funct. Theory (2017).
* **J.-M. Huusko**, T. Korhonen, A. Reijonen, Linear differential equations with solutions in the growthspace $H\omega^\infty$, Ann. Acad. Sci. Fenn. Math. 41 (2016), no. 1, 399 – 416.
* **J.-M. Huusko**, Localisation of linear differential equations in the unit disc by a conformal map, Bull. Aust. Math. Soc. 93 (2016), no. 2, 260 – 271.

*2.2.2 Other publications (books, book chapters, etc.)*

* **J.-M. Huusko**, Methods for complex ODEs based on localization, integration and operator theory, Publications of the University of Eastern Finland. Dissertations in Forestry and Natural Sciences., no 268, (2017).

*2.2.3 List of 10 publications that you desire to submit and present for consideration*, which are to be attached to the application.

Provide a brief explanation for the selection\* and an indication of your own role regarding those papers that have more than one author.

\* Max. 1 page, 3,000 characters

* J. Gröhn, **J-M. Huusko**, J. Rättyä, Linear differential equations with slowly growing solutions, Trans. Amer. Math. Soc. 370 (2018), 7201-7227.

The main idea for this paper came from J. Rättyä. Most calculations were done by me and confirmed by J. Gröhn. Gröhn and Rättyä elevated the quality of the paper and I confirmed the calculations.

* **J.-M. Huusko**, T. Vesikko, On Becker’s univalence criterion, J.Math.Anal.Appl. (2017), 458 (1), 781-794.

The suggestion to this paper came from J. Rättyä who did similar calculations with Nehari univalence criterion. Most calculations were done by me and confirmed by T. Vesikko. I expanded the topics to normal functions.

* **J.-M. Huusko**, M. Martín, Criteria for bounded valence of harmonic mappings, Comput. Methods Funct. Theory (2017).

I introduced M. Martin with a recent paper by Becker and Pommerenke. M. Martin suggested writing of this paper, made most of the calculations which I confirmed.

* **J.-M. Huusko**, T. Korhonen, A. Reijonen, Linear differential equations with solutions in the growth space $H\omega^\infty$, Ann. Acad. Sci. Fenn. Math. 41 (2016), no. 1, 399 – 416.

All the authors had an equal contribution in all stages of writing the paper.

* Huusko’s main contributions include: study of the weights and conditions (3) and (4); proof of Theorem A.
* Korhonen’s main contributions include: proof of Theorem 3.
* Reijonen’s main contributions include: overall study of the topic.

However, most topics were discussed together by all the authors.

* **J.-M. Huusko**, Localisation of linear differential equations in the unit disc by a conformal map, Bull. Aust. Math. Soc. 93 (2016), no. 2, 260 – 271.

The suggestion for this paper came from J. Rättyä. I made all the calculations myself.

***2.3 Funding/grants situation*** Major (over SEK 50,000/year (~5000€)) grants received as principal applicant or co-applicant (indicate principal applicant and other co-applicants) in the past five years

*3.3.1 EU or national research council (or equivalent) funding.*

N/A

*2.3.2 Private foundation funds and other funding.*

N/A

*2.4 Evaluations of own scientific research from a national research council or the equivalent* over the past five years(optional) [For applications to Full Professorships also assessments/evaluations for professorships made over the past five years can be attached to the application.]

N/A

***2.5 Research policy assignments***

*2.5.1 Member of national research councils or committees of these*

N/A

*2.5.2 Membership of other boards or committees granting funding*

N/A

*2.5.3 External evaluator/expert for Swedish and foreign research applications*

(over the past five years)

N/A

***2.6 Interaction with the surrounding society as well as popular science activities***

*2.6.1 Information about research and development work, and the ability to interact with the surrounding society*

*2.6.2 Participation in Public Debate or other Research Communications*

Active in UEFDSA seminars.

*2.6.3 Collaboration with others concerning education and research*

Active member of Department of Physics and Mathematics in UEF. Collaboration with photonics members.

*2.6.4 Project development/development of activities*

N/A

*2.6.5 Contract education*

N/A

*2.6.6 Contract research*

N/A

*2.6.7 Development assignments*

Making online courses.

*2.6.8 Patents*

N/A

*2.6.9 Entrepreneur activities*

N/A

***2.7 Other academic/scientific qualifications and experience***

*2.7.1 National and international awards or honours*

N/A

*2.7.2 Membership in national academies, etc.*

N/A

*2.7.3 Editorial/advisory Board of international journals*

Editor-in-chief of UEFDSA newspaper.

Editor-in-chief in Metodologia, a peer-reviewed journal in methodology.

UEFDSA Julian Assange award (Given for an excellent critical journalism and support of freedom of expression)

*2.7.4 Assignments as an opponent*

N/A

*2.7.5 Expert assignments*

N/A

**3 PEDAGOGICAL QUALIFICATIONS**

Assessment and evaluation criteria regarding pedagogical proficiency:

• ability to plan, implement and evaluate teaching, as well as the ability to supervise and provide academic supervision/tutor students at all levels of education

• ability to vary teaching methods and forms of examination in relation to expected study results and the nature of the particular subject

• experience with collaboration with the surrounding society in planning and implementation of education/training

• participation in the development of learning environments, teaching materials and study material

• a reflective approach to student learning and your own role as a teacher.

The teaching qualifications and experience must be documented in a teaching qualifications/experience portfolio with the following headings:

***3.1 Pedagogical statement***

A statement of your perspective concerning pedagogical methods and approaches; your basic perspectives and opinions concerning pedagogical approaches. (2 pages maximum, total max. 6,000 characters)

In teaching mathematical theorems, I believe the best approach is

* start with an introductory example
* make a sketch of the proof
* make the rigorous proof
* analyze the proof

Use the steps which are needed.

I believe that high-quality graphics and dynamical figures elevate the learning experience. Also, quizzes allow students to rehearse the topic many times.

***3.2 Pedagogical experience***

Concrete teaching experiences (e.g. course title, description and course period; and specific teaching contributions). Provide evidence of your pedagogical skills (see criteria above): describe activities, target groups, pedagogical choices, results, lessons learned and reflections, participation in the development of learning environments, teaching materials and study materials. The descriptions must be appropriately substantiated.

* Introduction to Fourier analysis, 8 ECTS, lectures and exercises. Everything is offered to students as very clear videos, see <http://integraali.com/fourier/videos/>
* Introduction to mathematics, 4 ECTS, exercises
* Topology, 8 ECTS, exercises

Other courses, see <http://integraali.com/huusko/fi/opetus.html#opetus>

I believe the course names are understandable, even though, they are in Finnish.

***3.3 Evaluations and assessments***

Provide certificates or documents from appraisals from e.g. the Head of Department, Director of Studies, colleagues, external assessors and students. Please provide a reference person, if possible.

Contact: Risto Korhonen, [risto.korhonen@uef.fi](mailto:risto.korhonen@uef.fi), +358504422684

***3.4 Supervision***

*3.4.1 Supervision of postdoctoral fellows* (include period of supervision)

N/A

*3.4.2 Supervision of PhD students* (include year of degree; indicate whether main or co-supervisor)

N/A

*3.4.3 Supervision of MSc and BSc* (or equivalents) students (number of students for each)

N/A

***3.5 Additional pedagogical training and experience***

*3.5.1 Pedagogical training* (e.g. courses in pedagogy)

In total 60 ECTS of pedagogical studies in my MSc – I graduated as a teacher in mathematics and physics.

*3.5.2 Pedagogical development work*

In 2019-2020, developing online course materials. See

* <http://integraali.com/vektorilaskenta/videot/kuvat/vektorilaskennan-kuvat.html>
* <http://integraali.com/vektorilaskenta/videot/vektorivideolista.html>
* <http://integraali.com/kompleksiluvut/kuvat/kuvat.html>
* <http://integraali.com/kompleksiluvut/kompleksivideolista.html>
* <http://integraali.com/usean/kuvia/usean-kuvia.html>
* <http://integraali.com/usean/usean-listaus.html>

*3.5.3 Development of teaching materials, books or similar materials*

I am currently writing my first non-mathematical book, which is turning out quite beautiful:

* <http://integraali.com/defense/defense2/Publications/preprints/Huusko-Teatteria_Kuhmossa_preprint.pdf>

*3.5.4 Participation in pedagogical conferences*

* Finnish mathematical days, Oulu, Finland 1/2020 (talk about online courses)

*3.4.6 Planning of teaching/educational programme, assignments with educational responsibility*

As a member of Department of Physics and Mathematics, UEF.

*3.4.7 Pedagogical proficiency awards*

*N/A*

***3.5 Attachments to the teaching qualifications/experience portfolio***

Examples of documents that can be compiled into one file and attached to the above listed teaching qualifications/experience include:

• Certificate of participation in pedagogic educational programmes/teacher training

courses

• Copies of pedagogical distinctions/awards

• Compilations of course evaluations

• Reviews from superiors and colleagues regarding pedagogical aspects

• Examples of teaching materials developed

• Examples of study guides or other instructions to students

**4 OTHER EXPERIENCE**

***4.1 International activity***

*5.1.1 Working or research visits abroad,* incl. periods after receiving a doctor’s degree

N/A

*4.1.2 Active participation in international conferences over past five years*.

Indicate type of activity: plenary lectures, invited presentations, chairmanship, session organisation, posters, etc.

* Finnish mathematical days, Oulu, Finland 1/2020 (talk)
* Tokyo Institute of Technology, Tokyo, Japan, 7/2019 (talk)
* Hayama Symposium, Hayama, Japan, 7/2019
* Tohoku University, Sendai, Japan, 7/2019 (talk)
* New Developments in Complex Analysis and Function Theory, Heraclion 7/2018 (poster)
* Chinese-Finnish workshop in complex analysis, Beijing, 8/2017 (talk)
* Analysis Near the Pole, Svalbard, 8/2018 (talk)
* CMFT-2017, Lublin, 7/2017 (talk)
* Indian Statistical Institute, Chennai Centre (epävirallinen vierailu)
* Normal families, Würzburg, 5/2015 (poster)
* conferences at UEF: 2012, 2014, 2015 (poster), 2016, 2018 (poster)
* mathematics research seminar in UEF, 2013-2017 (5 talks)

*4.1.3 International commitments* (board work, etc. in international organisations)

*N/A*

*4.1.4 International cooperation resulting in publications.*

*N/A*

***4.2 Administrative tasks/positions***

*4.2.1. Report on the development and management of activities and personnel (*research group, department/institution, etc.) with indication of time expended, dates, and size of the entity.

*4.2.2 Membership on university boards, councils or committees* (e.g. Faculty Board, departmental councils/committees, etc.) over past five years

N/A

*4.2.3 Other professional administrative assignments/tasks*

In 1.2.2018-31.12.2018, IT-support person, UEF.

***4.3 Other assignments/tasks of significance***

Coaching of PhD students.

**5 REFERENCES, INCLUDING CONTACT DETAILS**

Provide name, professional affiliation, telephone number and e-mail address

* Current supervisor: Professor Risto Korhonen, [risto.korhonen@uef.fi](mailto:risto.korhonen@uef.fi), +358504422684
* PhD supervisor: Professor Jouni Rättyä, [jouni.rattya@uef.fi](mailto:jouni.rattya@uef.fi), +358504423451
* Colleague: Assistant Professor Janne Heittokangas, [janne.heittokangas@uef.fi](mailto:janne.heittokangas@uef.fi),
* Colleague: University teacher Janne Gröhn, [janne.grohn@uef.fi](mailto:janne.grohn@uef.fi), +358406797246