Research Project Application Form

Graduate School of Natural Sciences

Use of this form is mandatory for all large research projects, notably final thesis work (“afstuderen”). It must be handed in by the student at the student desk (“studentenbalie”), Buys Ballot Building room 184b, prior to starting the project.

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| --- | --- | --- | --- | --- |
| **Student** | | | | |
| **Name of MSc programme** | | Computing Science, Programming Technology | | |
| **First and last name of student** | | Beerend Lauwers | | |
| **Email address** | | beerendlauwers@gmail.com | | |
| **Student number** | | 3720942 | | |
| **Project supervisor (first examiner)** | | | | |
| **Name and title (must be a Utrecht University staff member)** | | prof. dr. J.T. Jeuring | | |
| **Research group (chair)** | | Software Technology | | |
| **Email address** | | J.T.Jeuring@uu.nl | | |
| **Daily supervisor Fill out this section only if the project supervisor is not the daily supervisor!** | | | | |
| **Name and title** | |  | | |
| **Affiliation** | |  | | |
| **Address** | |  | | |
| **Telephone number** | |  | | |
| **Email address** | |  | | |
| **Second examiner** | | | | |
| **Name and title (must be a Utrecht University staff member)** |  | | | |
| **Research group (chair)** |  | | | |
| **Email address** |  | | | |
| **Research project** | | | | |
| **Title** | | Embedding Contract Inferencing for Functional Programs In Ask-Elle | | |
| **Starting date** | | 8/02/2013 | | |
| **Ending date** | | 31/10/2013 | | |
| **Number of ECTS** | | 40 | | |
| **Short description of the project, including aims** | | Ask-Elle is a programming tutor created by Alex Gerdes his PhD Thesis. It utilizes (transformations of) model solutions to provide feedback to students on their progress.  However, if a student's program cannot be reduced to such a model solution, providing helpful feedback becomes hard to do.  The Master Thesis of Jurriën Stutterheim focuses on the development of a contract inferencing system for functional programs, with the goal to embed this functionality in the Ask-Elle programming tutor, so as to provide a new source of meaningful feedback to students using the tutor.  In the "Future Work" section of the thesis, Stutterheim notes that the actual integration of the contract inferencing system in Ask-Elle still remains to be done. This thesis aims to achieve this goal and investigate the possible increase in feedback quality.  The research question is as follows: Having embedded contract inferencing in Ask-Elle, does this new functionality provide students with more detailed feedback than without?  The project is divided into three main research goals:   * **Goal One** Embed the contract inferencing system as described in Stutterheim's thesis. * **Goal two** Perform tests with students to check if the newly-implemented functionality adds value to the provided feedback. * **Goal Three** Analyze the testing results and report our findings.   Please refer to the research proposal for more details concerning each research goal. Each main goal is further divided into several steps, which act as a point of reference for the progress made.  Goals one and two can be extended with Stretch Goals if the original main research goals require less time than was planned. Please refer to the research proposal for details. | | |
| **Agreements between student and supervisors** | | | | |
| **Number of hours available for supervision** | | | |  |
| **Planning/timing of the supervision (e.g. ‘weekly meetings’)** | | | |  |
| **Agreed student work load (e.g. full time, 4 days/week, etc.)** | | | |  |
| **Student absence (holidays, courses, etc.)** | | | |  |
| **Supervisor absence (holidays, conferences, etc.)** | | | |  |
| **Intermediate evaluations of student performance (specify at least two dates)** | | | |  |
| **Presentations to be held** | | | |  |
| **Lab/group meetings to be attended** | | | |  |
| **Other activities agreed upon** | | | |  |
| **Primary assessment criteria  (please see appendix for examples. Final presentation and written thesis must be part of the assessment)** | | | |  |
| **Copyright** | | | | |
| **By signing this document, the student declares to transfer the copyright of any and all products, including the tangible and intellectual products, of the research project to Utrecht University. The rights of the student by scientific standards to be a co-author of publications or to be otherwise acknowledged are still recognized. The student is allowed and must upload his final assessed thesis to the university publication archive IGITUR. At a later stage, the thesis may be made public via IGITUR, or its access may be restricted temporarily or indefinitely.** | | | | |
| **Signatures** | | | | |
| **Student signature and date (Must be signed when form is handed in at the student desk.)** | | |  | |
| **Project supervisor signature and date (Must be signed when form is handed in at the student desk.)** | | |  | |
| **Master’s programme coordinator name, signature, and date (Must be signed when form is handed in at the student desk.)** | | |  | |
| **Examination board member name, signature and date  (Approval and signature will be obtained by student desk.)** | | |  | |

# Appendix: an incomplete list of possible assessment criteria

* Level – Theoretical level, practical/experimental level, understanding of the underlying matter, amount of work in relation to number of ECTS
* Problem handling – Methods, techniques, design instrumentation, implementation, experiments
* Skills – Analytical skills, model building, distinguishing matters of major and minor importance, evaluation, independence, collaboration, self-reflectiveness, planning
* Effort and attitude
* Originality
* Relevance, valorization
* Report/Thesis – literature survey, problem statement, style of writing, quality of Dutch/English, report structure, textual structure, coherence/consistency, conclusions/recommendations, neatness
* Oral presentation – presentation/public speaking skills, structure, discussion skills, presentational aids