**INSTRUCTIONS**

The following Annual Activity Report is to be filled out and given to the Department Chair by October 1, 2021. This report will serve as the basis for your annual faculty review and should include all of your activities during the past fiscal year. If no form is submitted, then your annual review will be based only on what the chair knows about you and will lead to an unfavorable review.

The instructions on filling out the activity report are self-explanatory and completing the report should require a minimum amount of time to complete, particularly if you maintain an up-to-date CV, which I strongly recommend that you do. The purpose of this activity report is to provide yourself with your own personal evaluation of your annual accomplishments, and to provide the Chair with a consistent and easy to read document upon which to perform an annual review. In this report, you will be able to ensure that it is complete and contains everything important for a fair and accurate annual review.

For all information (except courses taught), you are to report only that activity that falls within the prior fiscal year, which is from July 1, 2021 to June 30, 2022. For example, for your **Published Refereed Journal Papers** (**appeared or accepted in FY 2022**), this category should only include those papers that appeared or were accepted over this time period. As stated in the instructions, list publications in IEEE standard format, grouped according to the categories that are defined, and indicate the names of student authors for whom you are the advisor in **bold** letters. If known, also list the **impact factor** of journals and conference proceedings.

The report also includes three optional questions regarding the impact of the Covid-19 crisis on your activities this year. In addition to that, please do not forget your personal statement that is described on the last page.

Finally, when you submit the report, please add your email id at the beginning of the file name so that your chair can easily differenate the numerous faculty submissions.

**ANNUAL ACTIVITY REPORT   
Fiscal Year 2022  
July 1, 2021 – June 30, 2022**

**Name:** ThanhVu Nguyen

**TEACHING**

**Base Teaching Load FY 2021 (mark one)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Term (4+4)** | **Tenured (2+2)** | **TT Year 1-2 (1+1)** | **TT Year 3-6 (1+2)** | **Other:** |
|  |  | **X** |  |  |

**Course Reductions (insert corresponding number with brief explanation)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Buyout** | **Release for Research** | **Service** | **Study Leave** | **Other** |
|  |  |  |  |  |

**Courses Taught**

Note that since the evaluation metrics changed in Spring 2022, the report format changes

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Year** | **Term** | **Course** **Number/Section** | **Course** **Title** | **No**. **of** **Students** | **No. of Responses** | **Overall Teacher Rating** | | **Overall Class Rating** | | **Notes\*** |
| 2021 | Summer |  |  |  |  |  | |  | |  |
|  |  |  |  |  | |  | |  |
| 2022 | Fall | SWE619 | OO Software Specification and Construction |  |  |  | |  | | F |
|  |  |  |  |  | |  | |  |
|  |  |  |  |  | |  | |  |
|  |  |  |  |  | |  | |  |
| For Sp 22, please report the average of the mean ratings of the following metrics: Student Participation (Q7-Q8) Learning Outcomes (Q9-Q12),Course Environment/Experience (Q13-Q17), Instructor Prepartion (Q18-Q20) | | | | | | | | | | |
| 2022 | Spring | **Course** **Number/Section** | **Course** **Title** | **No**. **of** **Students** | **No. of Responses** | Avg. Q7-Q8 | Avg. Q9-Q12 | Avg. Q13-Q17 | Avg. Q18-Q20 | **Notes\*** |
| SWE619 | OO Software Specification and Construction |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |

**\*** Indicate a course that you have newly developed by (ND), a course that you have taught for the first time by (F), or a course where you have made substantial changes by (C). Please provide relevant comments below

**Student Supervision**

Note: This section includes supervision of BS and MS students. Supervision of PhD students and post-doctoral fellows and research faculty will be entered under Research and Scholarship. Please include student advising under Service

**B.S. OSCAR Student Mentor**

|  |  |  |
| --- | --- | --- |
| First Name | Last Name | Project Title, Dates, Your Role, |
|  |  |  |
|  |  |  |
|  |  |  |

**Other Undergraduate Research Mentoring**

|  |  |  |
| --- | --- | --- |
| First Name | Last Name | Project Title, Dates, and Your Role\* |
| KimHao | Nguyen | Analyzing CMake build files using Symbolic Execution, F'20--current, Mentor |
|  |  |  |
|  |  |  |

**M.S. Student Advisor *(Students who graduated FY 2022)***

|  |  |  |  |
| --- | --- | --- | --- |
| First Name | Last Name | Thesis Title | Your Role. Include also any support you may have provided. |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

**M.S. Student Advisor *(Continuing FY 2022 Students)***

|  |  |  |  |
| --- | --- | --- | --- |
| First Name | Last Name | Thesis Title | Your Role. Include also any support you may have provided. |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

**RESEARCH AND SCHOLARSHIP**

**Publications and Creative Works**

List publications in IEEE standard format, grouped according to the categories defined below. Indicate the names of student authors for whom you are the advisor in **bold** letters. If known, indicate the **impact factor** of journals and acceptance rate of conference proceedings. Add/delete rows as necessary.

|  |  |
| --- | --- |
| **Books** (**appeared in FY 2022**) | |
| 1 |  |
| 2 |  |
| **Book Chapters** (**appeared in FY 2022**) | |
| 1 |  |
| 2 |  |
| **Published Refereed Journal Papers** (**appeared or accepted in FY 2022**) | |
| 1 | Thanhvu Nguyen, K**imHao Nguyen**, and Matthew Dwyer. “Using Symbolic States to Infer Numerical Invariants”. In: Transactions on Software Engineering (TSE) (2021). PDF. Impact factor 4.78 |
| 2 |  |
| 3 |  |
| **Submitted Refereed Journal Papers** (**in FY 2022**) | |
| 1 |  |
| 2 |  |
| 3 |  |
| 4 |  |
| **Refereed Conference Papers** (**appeared or accepted in FY 2022)** | |
| 1 | Simón Gutierrez Brida, Germán Regis, **Guolong Zheng,** Hamid Bagheri, ThanhVu Nguyen, Nazareno Aguirre, and Marcelo Frias. “ICEBAR: Feedback-Driven Iterative Repair of Alloy Specifications”. In: Automated Software Engineering (ASE). IEEE, 2022 |
| 2 | **Guolong Zheng**, ThanhVu Nguyen, Simón Gutiérrez Brida, Germán Regis, Marcelo Frias, Nazareno Aguirre, and Hamid Bagheri. “ATR: Template-based Repair for Alloy Specifications”. In: Interna- tional Symposium on Software Testing and Analysis (ISSTA). ACM, 2022, pages 666– 677. |
| 3 | **KimHao Nguyen**, ThanhVu Nguyen, and Quoc-Sang Phan. “Analyzing the CMake Build System”. In: 2022 IEEE/ACM 44th International Conference on Software Engineering: Software Engineering in Practice (ICSE-SEIP). IEEE, 2022, pages 27–28. |
| 4 | Thanh-Dat Nguyen, Thanh Le-Cong, ThanhVu H Nguyen, Xuan-Bach D Le, and Quyet-Thang Huynh. “Toward the Analysis of Graph Neural Networks”. In: 2022 IEEE/ACM 44rd International Conference on Software Engineering-New Ideas and Emerging Results (ICSE-NIER). IEEE, 2022. |
| 5 | **Didier Ishimwe**, **KimHao Nguyen**, and ThanhVu Nguyen. “Dynaplex: Inferring Asymptotic Runtime Complexity of Recursive Programs”. In: 2022 IEEE/ACM 44th International Conference on Software Engineering: Companion Proceedings (ICSE-Companion). IEEE, 2022, pages 61– 64. |
| 6 | ThanhVu Nguyen, **KimHao Nguyen**, and **Hai Duong**. “SymInfer: Inferring Numerical Invariants using Symbolic States”. In: 2022 IEEE/ACM 44th International Conference on Software Engineering: Companion Proceedings (ICSE-Companion). IEEE, 2022, pages 197–201. |
| 7 | **KimHao Nguyen** and ThanhVu Nguyen. “GenTree: Inferring Configuration Interactions using Decision Trees”. In: Automated Software Engineering-Tool Demo. IEEE, 2021, pages 1232– 1236. |
| 8 | **Guolong Zheng**, ThanhVu Nguyen, Simón Gutiérrez Brida, Germán Regis, Marcelo F Frias, Nazareno Aguirre, and Hamid Bagheri. “FLACK: Localizing Faults in Alloy Models”. In: Automated Software Engineering-Tool Demo. IEEE, 2021, pages 1218–1222. |
| 9 | Simón Gutierrez Brida, Germán Regis, **Guolong Zheng**, Hamid Bagheri, ThanhVu Nguyen, Nazareno Aguirre, and Marcelo Frias. “BeAFix: An Automated Repair Tool for Faulty Alloy Models”. In: Automated Software Engineering-Tool Demo. IEEE, 2021, pages 1213–1217. |
| **Submitted Refereed Conference Papers** | |
| 1 |  |
| 2 |  |
| 3 |  |
| 4 |  |
| **Non-Refereed Publications** | |
| 1 |  |
| 2 |  |
| 3 |  |
| **Issued Patents** | |
| 1 |  |
| 2 |  |
| **Invited Presentations and Keynote Speeches** | |
| 1 |  |
| 2 |  |
| 3 |  |

**FUNDED RESEARCH**

**Newly Awarded Research Grants (FY 2022)**

|  |  |  |
| --- | --- | --- |
| 1 | Name of PIs, Co-PIs in order submitted | Nguyen (GMU), Antonopoulos (Yale) Koskinen, Le (Stevens) |
| Title | Collaborative: Medium: Ensuring Safety and Liveness of Modern Systems through Dynamic Temporal Analysis |
| Sponsor | NSF |
| Dates | 7/15/2021–7/14/2024 |
| $ award and your share | 1.2M (400K my share) |
| 2 | Name of PIs, Co-PIs in order submitted |  |
| Title |  |
| Sponsor |  |
| Dates |  |
| $ award and your share |  |
| Total $ awards, your share, and FY 2021 expenditures | |  |

**Other Active Research Grants (FY 2021)**

|  |  |  |
| --- | --- | --- |
| 1 | Name of PIs, Co-PIs in order submitted |  |
| Title |  |
| Sponsor |  |
| Dates |  |
| $ award and your share |  |
| 2 | Name of PIs, Co-PIs in order submitted |  |
| Title |  |
| Sponsor |  |
| Dates |  |
| $ award and your share |  |
| Total $ awards, your share, and FY 2021 expenditures | |  |

**Submitted Research Proposals (FY 2022)**

|  |  |  |
| --- | --- | --- |
| 1 | Name of PIs, Co-PIs in order submitted |  |
| Title |  |
| Sponsor |  |
| Dates |  |
| $ award and your share |  |
| Proposal Status |  |
| 2 | Name of PIs, Co-PIs in order submitted |  |
| Title |  |
| Sponsor |  |
| Dates |  |
| $ award and your share |  |
| Proposal Status |  |
| Total $ awards & your share | |  |

**PhD Students, Postdocs and Research Faculty**

**Ph.D. Student Advisor *(Students who graduated FY 2022)***

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| First Name | Last Name | PhD  Degree | Dissertation Title | Semester of Graduation | Your Role\* | Employer |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

\* Advisor, Co-Advisor (if co-advisor, please name the co-advisor). Please note if the student was supported by your external research funding and the number of any such credits

**Ph.D. Student Advisor *(Continuing FY 2022 Students)*** *–* Put **names in Bold** if Full Time

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| First Name | Last Name | PhD  Degree | Dissertation Title | Years in  Program | Anticipated  Graduation Date | Your Role\* |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

\* Advisor, Co-Advisor. Please note if the student was supported by your external research funding and the number of any such credits

**Total No. of credits of 998/999 credits you have supervised in FY 2022: ­­­­­ \_\_\_**

**Research Faculty and Post Docs Fellows you have funded and/or supervised**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| First Name | Last Name | Position | Focus of Research | Period | Funding Source | Your Role\* |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

\*Indicate also the level of support you have provided from external research funds

**SERVICE and HONORS/AWARDS (FY 2022)**

**Internal Service**

|  |  |
| --- | --- |
| **Service to the Department** | |
| 1 |  |
| 2 |  |
| 3 |  |
| 4 |  |
| **PhD/MS Student Committee (Non-Advisor). Include Student name, program, and stage** | |
| 1 |  |
| 2 |  |
| 3 |  |
| **Service to the College or the University** | |
| 1 |  |
| 2 |  |
| 3 |  |
| 4 |  |

**External Service**

|  |  |
| --- | --- |
| **Service to the Profession (Editorial/Reviewer/Conference committees etc.)** | |
| 1 |  |
| 2 |  |
| 3 |  |
| 4 |  |
| 5 |  |
| 6 |  |
| **Other Service** | |
| 1 |  |
| 2 |  |

**Honors and Awards (including student awards)**

|  |  |
| --- | --- |
| 1 |  |
| 2 |  |
| 3 |  |

**Other Activities (Consulting, Professional Course Development or Delivery) or Other**

|  |  |
| --- | --- |
| 1 |  |
| 2 |  |
| 3 |  |

**IMPACT of COVID-19 in FY 2022.**

1. **If you wish, please comment on the effects (or challenges) of the Covid-19 crisis on your performance, including in research, and scholarship, teaching, and service in FY 22**
2. **Please describe any new endeavors you have undertaken in response to the Covid-19 crisis.**
3. **Other Comments you wish to make**

**PERSONAL STATEMENT**

In this section, please address the items below. If relevant, feel free to either repeat or make reference to your pertinent responses to Q1, Q2, and/or Q3 above.

1. A statement of what you feel were your **major accomplishments** in the 2022 fiscal year.
2. A personal reflection on how well you accomplished your stated goals that you submitted last year for the 2022 fiscal year, and
3. A personal statement of your objectives for the coming year.  Be as specific as you can and avoid putting down general statements such as "To get more funding and to write more papers."

You may also use this part of your Annual Report to make any additional comments or suggestions that you feel are important.