Interoperability Systems

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1. ON INTEROP: FOCUS AND GOALS

This paper will discuss interoperability of programming languages and what is involved in making that happen. Some steps along the way may include:

- A general exploration, utilizing [4, 2, 7].
- An exploration of Virtual Machines, with [8, 3, 6]. This section may also include wiki references.
- A look at Markup Languages as a method of realizing interop, with examples from [1, 2]. I will need more papers here.

I have a few papers with uncertain utility[5, 7], but they may still be useful. Apart from these, I will need a few more papers for reference in most areas.

2. REFERENCES

[1] G. Acampora. Fuzzy markup language: A xml based language for enabling full interoperability in fuzzy systems design. In G. Acampora, V. Loia, C.-S. Lee, and M.-H. Wang, editors, *On the Power of Fuzzy Markup Language*, volume 296 of *Studies in Fuzziness and Soft Computing*, pages 17–31. Springer Berlin Heidelberg, 2013. *One example of an ML system. May be useful for comparison of ML style interop.*

[2] Y. Bromberg, P. Grace, and L. ReÌĄveilleÌĂre. Starlink: Runtime interoperability between heterogeneous middleware protocols. In *Distributed Computing Systems (ICDCS), 2011 31st International Conference on*, pages 446–455, 2011. *An intensive exploration of what is required to achieve interop. Describes a full interop system using an ML.*

[3] C. Chen, D. Brown, C. Sconyers, G. Vachtsevanos, B. Zhang, and M. Orchard. A .net framework for an integrated fault diagnosis and failure prognosis architecture. In *AUTOTESTCON, 2010 IEEE*, pages 1–6, 2010. *Most of this isn't useful, but has a description of the .NET framework. Might be more useful to just look up the wikipedia.*

[4] N. Ide and J. Pustejovsky. What does interoperability mean, anyway? toward an operational definition of interoperability for language technology. In *Proc. 2nd Int. Conf. Global Interoperability Lang. Res*, 2010. *A general exploration of the definitions and requirements of interoperability.*

[5] L. Kats and E. Visser. Encapsulating software platform logic by aspect-oriented programming: A case study in using aspects for language portability. In *Source Code Analysis and Manipulation (SCAM), 2010 10th IEEE Working Conference on*, pages 147–156, 2010. *'m not wholy sure what this could be used for. Need to read.*

[6] W. H. Li, D. R. White, and J. Singer. Jvm-hosted languages: they talk the talk, but do they walk the walk? In *Proceedings of the 2013 International Conference on Principles and Practices of Programming on the Java Platform: Virtual Machines, Languages, and Tools*, pages 101–112. ACM, 2013. *Explores how languages on the JVM differ from Java.*

[7] J. Matthews and R. B. Findler. Operational semantics for multi-language programs. *ACM Trans. Program. Lang. Syst.*, 31(3):12:1–12:44, Apr. 2009. *Long, but talks about high-level (more abstract?) considerations in language interop. May be useful, if I have time to read it.*

[8] D. S. V. Sujala D Shetty. Interoperability issues seen in web services. *IJCSNS International Journal of Computer Science and Network Security*, 9:160–169, August 2009. *Might have some info on why interoperability is a thing we want. Talks a bit about JVM and .NET, but is mostly about internet.*

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