

satisfactory performance is directly opposed to that of Hierholzer's algorithm, which performed extremely well in some cases, but not accurate in others, despite the next-ed-option scheme .randomized or default/

On the issue of AAA5;UA;R)A75PA!:=./,) "as not able to complete a "or'in& implementation of itB m0 approach "as resource-expensive, and) also too' a t\$rn in this project to std0 cl\$ster comp\$tin& desi&ns, "hich of co\$urse, did not directl0 #enefit m0 project(20 theoretical approach to"ards AAA5;UA;R)A75PA!:=./ is as follows : for e%er0 possi#le start 'mer node,) "o\$ld calc\$late an initial path, recording indices in this path "here 2 or more options exist(For instance, &i%en the path CDA>!6A8, D>!6AA8, D!6AA>8, D6AA>A8, DAA>A!8, DA>A!!8, D>A!!A8, DA!!AA8E the options inde+ list co\$ld #e the follo"in& : C0, 1, FE, "here DA>!6A8, D>!6AA8, and DAA>A!8 are the elements "here an alternati%e next node exists(!hen) "o\$ld #ac'trac' thro\$&h indices F, 1, and 0, at each inde+ recreatin& an alternati%e path(!he primar0 iss\$e here is that in an0 si&nificantl0-sized se*\$ence, there "o\$ld #e a m\$ltit\$de of options list, one for the initial path, and others for each recreation of the path at some options inde+() tried to find an efficient specification for this theoretical approach, #t) contin\$all0 st\$m#led \$pon the pro#lem of options inde+ list(

Testing

On to the testin& :) ha%e t"o main files, one called 35main5(p04 .the primar0 main file/, and a pre%io\$s one called 3main5(p04, "hich) catered to"ards the s\$#pro#lem of no parallel or d\$uplicate ed&es(!his condition of no parallel or d\$uplicate ed&es res\$lted in hi&hl0 inaccurate reassem#led se*\$ences and e%en tho\$&h) attempted to incorporate an ed&-repeat attri#ste to compensate, this "as to no availB) em#ar'ed on this pro#lem #eca\$se) fo\$nd it *site challen&in&, challen&in& to the point "here it is %irt\$all0 impossi#le()t "as a fool's errand, so) dismissed "or'in& on the 3main5(p04 file and foc\$sed on the other simpler s\$#pro#lem : that d\$uplicate and parallel ed&es can exist in the &raph(!he res\$lts can #e ascertained thro\$&h the 35main5(p04 file, simpl0 r\$rn : astorecord5all./ for the pro&ram to create a set of files "here res\$lts of acc\$rac0 and reassem#led se*\$ences are fo\$nd(

!he follo"in& is an o%er%ie" on the operations of astorecord5all./(6i%en some strin& that is con%erted into an o%erlap &raph, astorecord5all./ ch\$rn\$ o\$ F files

- string GA!666A>!!!AA8 :
 - accuracy test .both Files and =ierholzer8s/ :
 - 5(22 ?
 - accuracy test .only Files/ :
 - FJ(I ?
 - accuracy test .only =ierholzer8s/:
 - 100(0 ?
- string GAA>!>6>6>A6A6AG :
 - accuracy test .both Files and =ierholzer8s/ :
 - 5(125 ?
 - accuracy test .only Files/ :
 - FJ(I1 ?
 - accuracy test .only =ierholzer8s/:
 - 100(0 ?
- string G!A6>A>A!A6A!A6A!AG :
 - accuracy test .both Files and =ierholzer8s/ :
 - 12(IF ?
 - accuracy test .only Files/ :
 - 25(?
 - accuracy test .only =ierholzer8s/:
 - 0 ?

These results may have high accuracy percentages, but they highlight a persistent problem through the use of "or" on this project: the volatility of =ierholzer8s algorithm. As the accuracy results for the last string(=ierholzer8s algorithm scored a 0 ? on it() mentioned that) implemented several versions of Files and =ierholzer8s algorithms, but all of randomized next-choice-for-path approaches to =ierholzer8s algorithm .files are 3hier52(p04 and 3hier5H(p04/ chosen completely "iron" results(And so,) still "with the default next-choice-for-path option, that is, the file 3hier5(p04(

if you "are to personally run a store record5all./,) do not use "old have the high percentage results) entered(

Findings

Files algorithm, although intended for directed graphs, seems to do a better job of consistent return paths of correct length, as per implementations(=ierholzer8s algorithm, however, does not(Recall that the condition for finding a ;\$lerian path via Files algorithm is that there are either 0 or 2 odd-degree nodes, and that for =ierholzer8s algorithm is that every node has an even in-degree and out-degree(!he condition for =ierholzer8s algorithm is "hat seems to return false for some of my test strings(Whereas Files algorithm is intended to retrieve paths, =ierholzer8s is to ascertain some ;\$lerian cycle(!his stricter condition seems to impede on its accuracy(As a result, my 3hier5(p04 file is a slight modification on the original =ierholzer8s : it adds the same condition as Files, instead of the even in-degree/out-degree condition(!his may seem flawed, but this modified =ierholzer8s algorithm, 3hier5(p04, seems to be more accurate than that of 3hier52(p04 and 3hier5H(p04(

A persistent problem towards more accuracy is the next-ed&e-option scheme(!his scheme has two variants(Given a list of next-ed&e options, one variant chooses the default first one that satisfies for some condition, the other chooses a random ed&e from this list that satisfies(

Thoughts for Future Work

if) "are to do this project over again, one thing) "old change is the proportion

of #rainstormin&/researchin&) cond\$cted on ho" to appl0 &raph tra%ersal al&orithms s\$ch as 1ij'stra8s to findin& an acc\$rate ;\$lerian path(!hese acti%ities too' the &reat #\$\$' of m0 time(20 fascination "ith comp\$tin& seems to ha%e done me little &ood in #rin&in& toðer a refined prod\$ct, rather it split m0 time and di%erted m0 foc\$s(

)nstead,) "o\$d ha%e ta'en a closer loo' into Fle\$r08s and especiall0 =ierholzer8s al&orithms(20 implementations "ere not \$p to m0 e+pectations() coded se%eral %ersions of these t"o al&orithms, #\$\$t) seem to #e replicatin& the same #\$\$&&0 code each time() cannot state an0 specific iss\$e, #\$\$t) "o\$d attri#\$te these #\$\$&&0 implementations to m0 misdirected ener&ies in codin&, in other "ords,) need to do more testin& at smaller inter%als d\$rin& the codin& process(

After) ha%e #etter refined m0 ;\$lerian path-finder al&orithms,) "ill pro#a#l0 ta'e a more metic\$lo\$s loo' at &raph theor0 concepts as "ell as &onomic se*\$encin& machines, so that m0 code "ill not #e so d\$plicate and lac'in& in f\$ndamental \$nderstandin&(!he pro#lem of AAA5;UA;R)A75PA!:=:./ "ill, for the time-#ein&, #e a "or' in pro&ress(

@ther interestin& ideas that) st\$m#led \$pon in this %ent\$re incl\$de assi&nin& ed&es to some %ersion of an o%erlap &raph to increase the acc\$rac0 of retrie%in& the correct assem#l0(For instance, &i%en some #ac'ro\$nd info alon& "ith the 'mer ed&es, then "e co\$d assi&n "ei&hts to the ed&es s\$ch as path "ill ta'e the acc\$rate ne+t ed&e &i%en more than one options() ha%e not de%ised a "or'in& lo&istic for this plan(